

राष्ट्रीय प्रौद्योगिकी संस्थान वारंगल



National Institute of Technology Warangal

# ACADEMIC REPORT 2020-21



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# National Institute of Technology Warangal

## List of Board of Governors



Prof. N. V. Ramana Rao  
Chairperson I/c, &  
Director, N.I.T, Warangal.



Prof. K.V. Jayakumar  
N.I.T., Warangal  
(Up to 30.04.2021)



Shri S. Goverdhan Rao  
Secretary, BoG & Registrar  
National Institute of Technology,  
Warangal.



Shri Madan Mohan  
Additional Director General (HE)  
MoE, New Delhi.  
(Up to 26.04.2021)



Prof. M. Sydulu  
N.I.T., Warangal  
(From 01.05.2021)



Shri Mrutyunjay Behera  
Economic Adviser (HE)  
MoE, New Delhi  
(from 26.04.2021)



Prof. Ravi Kumar Puli  
Member Secretary, (TSCOST)  
Hyderabad.



Ms. Darshana M Dabral  
Jt. Secretary & Financial Advisor  
MoE, New Delhi.



Shri V. N. Kameswara Rao  
Associate Professor, N.I.T.,  
Warangal  
(Up to 04.08.2020)



Prof. B. S. Murty  
Director, IIT Hyderabad



Dr. K. Ramesh  
Associate Professor, N.I.T.,  
Warangal  
(From 05.08.2020)



## Foreword



**Prof N V Ramana Rao, Director, NIT Warangal**

National Institute of Technology, Warangal is one of the premier Technical Institutes of the country imparting quality technical education. The Institute has been progressing well on all fronts with time. Even though CORONA has brought changes in our lifestyle, it couldn't deter our spirits and innovations. The Institute is continuously striving to maintain the standards and live up to the expectations even during these testing times. The Institute has thrived well on all fronts in the last academic year 2020-21.

Online teaching through LMS is a new experience to all of us. The LMS team of the Institute has created the necessary LMS infrastructure so that the academic activities could be conducted smoothly in the online mode without interruption. Similarly, all the faculty have been equipped with the required digital tools including Laptops. The academic year has been successfully completed with the support of all the stakeholders. I congratulate all the teaching faculty for the remarkable transformation from "chalk and talk" to the "Online" mode. I am sure that this experience will facilitate enhancing our outreach programs, and blended mode will become a part of our teaching-learning process.

The 19<sup>th</sup> Convocation of the Institute was held in virtual mode on 9<sup>th</sup> October, 2021. The Hon'ble Minister for Education, GOI, Shri Dharmendra Pradhan Ji was the Chief Guest and Dr. K. Kasturirangan, Former Chairman ISRO and Chairman NEP-2020 was the Guest of Honor on the occasion.

The NITW Alumni Association has been doing great work by contributing in different ways for the development of the Institute. The ONLINE Teaching - Learning has brought to light the stark realities of disparities in the society. It was observed that a few students were not able to access the ONLINE classes because of lack of facilities. In response to a call given by the administration to the Alumni, nearly 225 Laptops have been donated by the Alumni to help the needy students.



Research, Publications and Patents have become a part of our Institute Work Culture. I am very happy that a large number of our faculty colleagues were recently sanctioned prestigious externally sponsored R&D Projects. I congratulate all of them. A large number of patents have been filed in this academic year 2020-21. My special congratulations to all the faculty colleagues whose patents were granted. I am confident that this work culture of "Academics blended with Projects, Publications and Patents" will take the Institute to greater heights.

The Institute has been periodically starting new programs making use of the expertise available in the Institute and the demands of the society. I am happy to inform that TWO new M.Tech Programs were started in this academic year 2020-21, viz., (1) M.Tech in Smart Electric Grid and (2) M.Tech in Biotechnology. The Institute has been in the forefront in implementing the NEP-2020. The curriculum of all the programs is being revised by incorporating the provisions of the NEP-2020. The revised curriculum will be implemented from the new academic year 2021-22. It is also being planned to start a new a 5-years integrated M.Sc program from the next academic year, 2021-22. This is only a beginning, but we have a long way to go before all the provisions of the NEP-2020 are completely implemented.

The students of the Institute have been excelling on all fronts. It is heartening to note that our Institute has done extremely well in the campus placements. A record number of UG and PG students were selected with attractive packages in the academic year 2020-21.

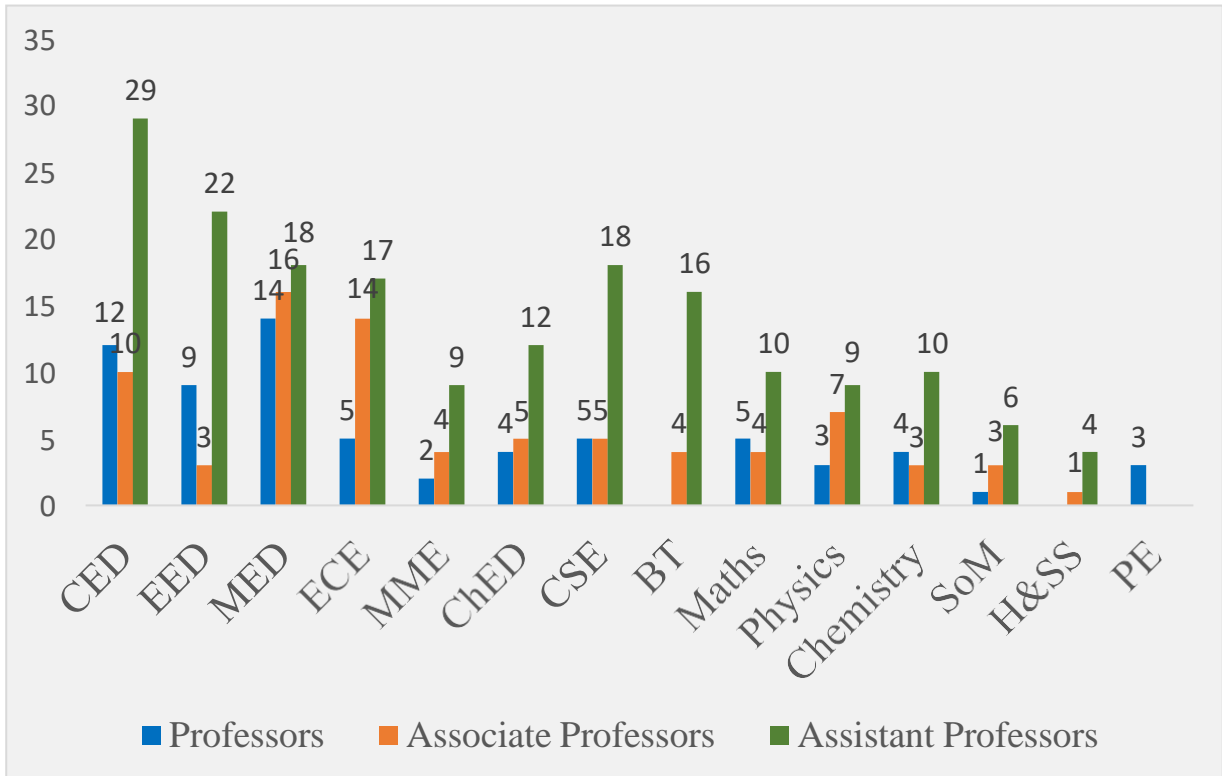
The Academic Report-2020-21 is a compilation of all the achievements of the institute, details of the academic and research activities, training and placement activities and various other developments taking place in the institute. I place on record my deep sense of appreciation to all those involved in the preparation of this Academic Report. I also take this opportunity to thank the members of the faculty, non-teaching staff, students and alumni of the institute, who are relentlessly working for the betterment of the institute.

**Prof N V Ramana Rao**  
Director  
NIT Warangal

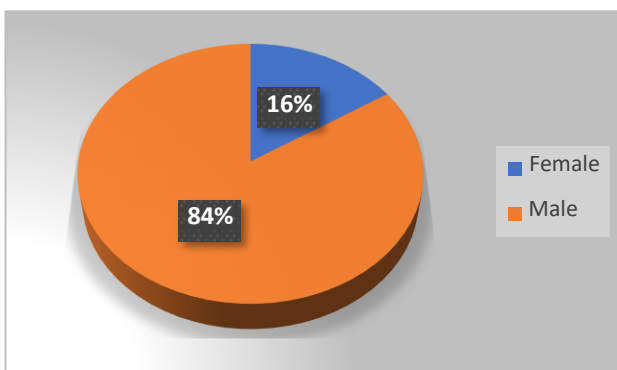
# Faculty Details

Total Faculty on Rolls: 324

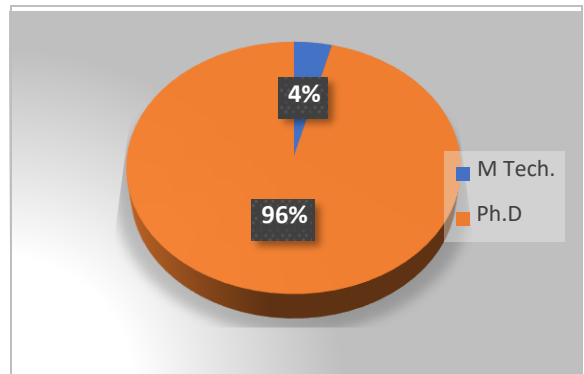
Department wise faculty distribution:



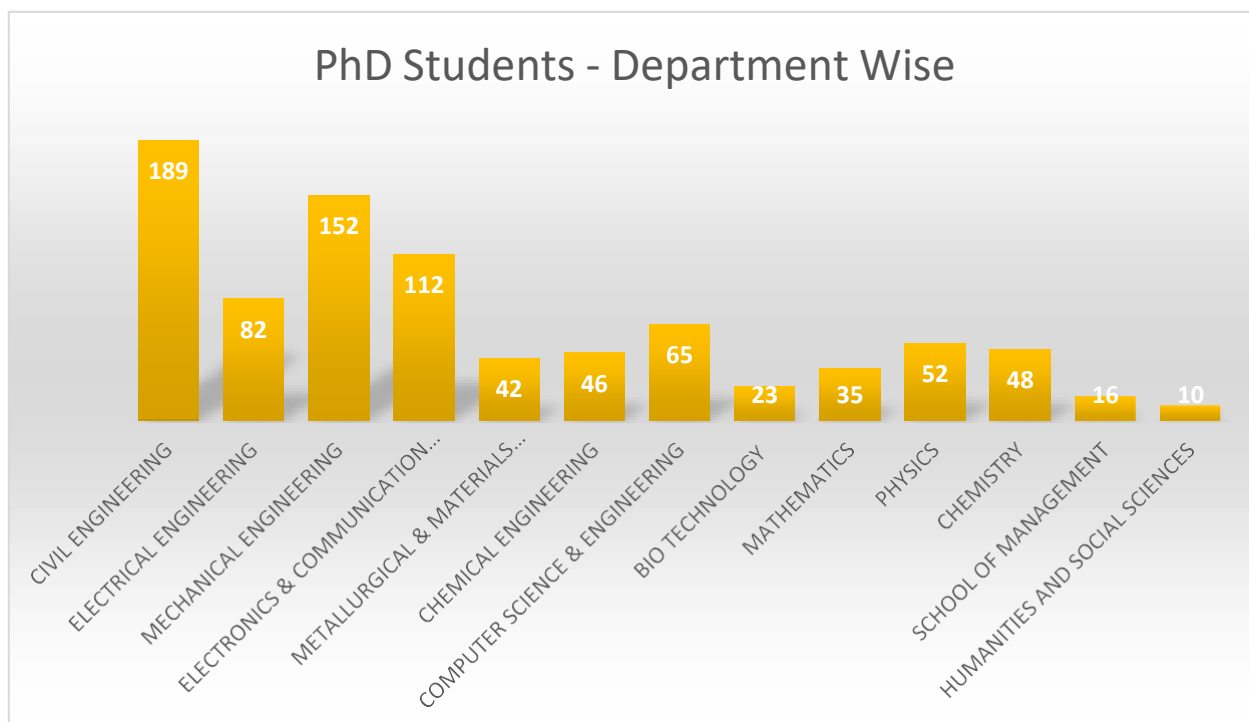
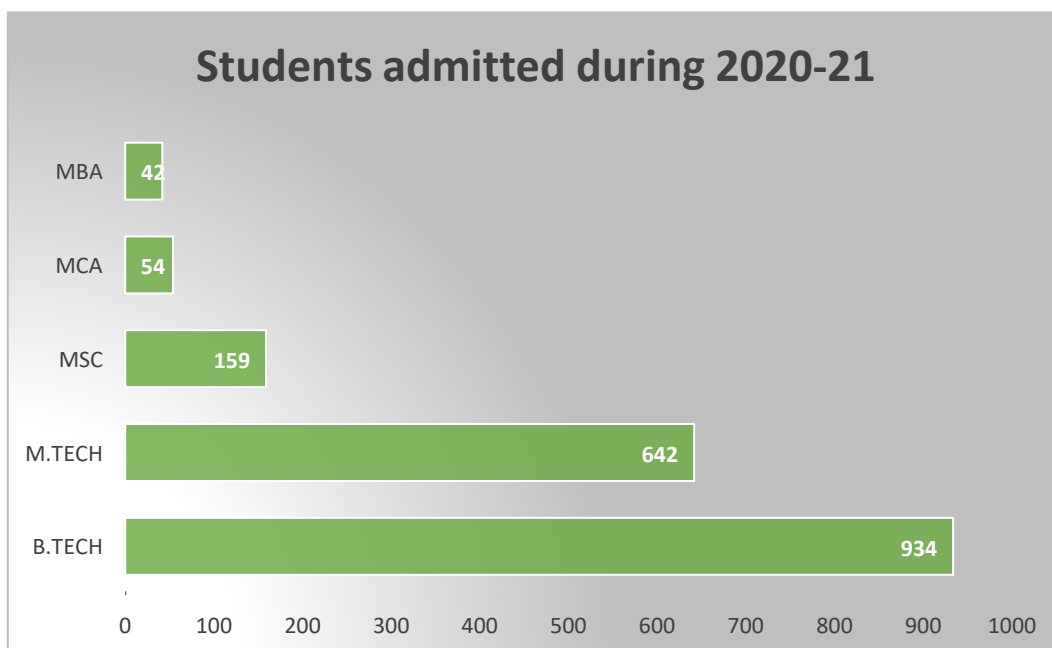
Faculty Details- Gender Wise



Faculty Details: Qualification wise



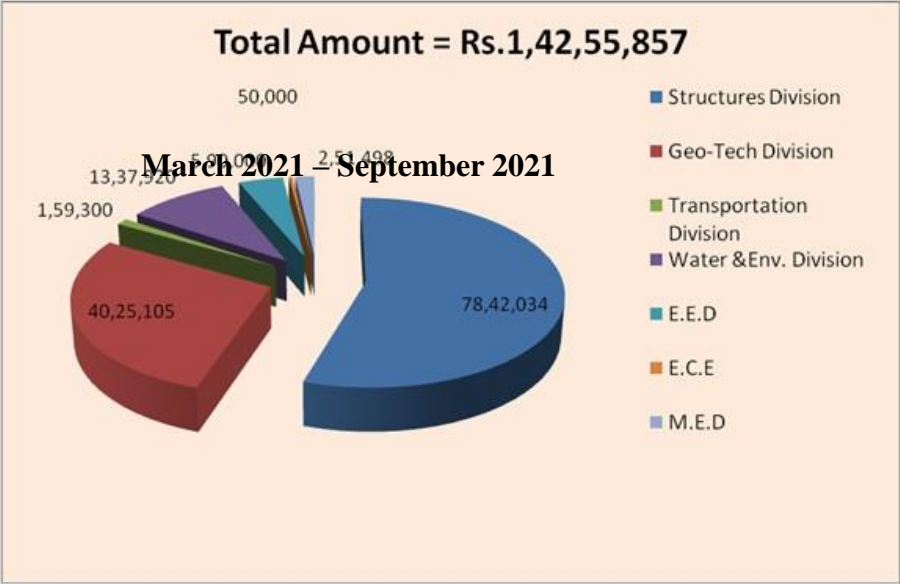
## Students admitted during 2020-21



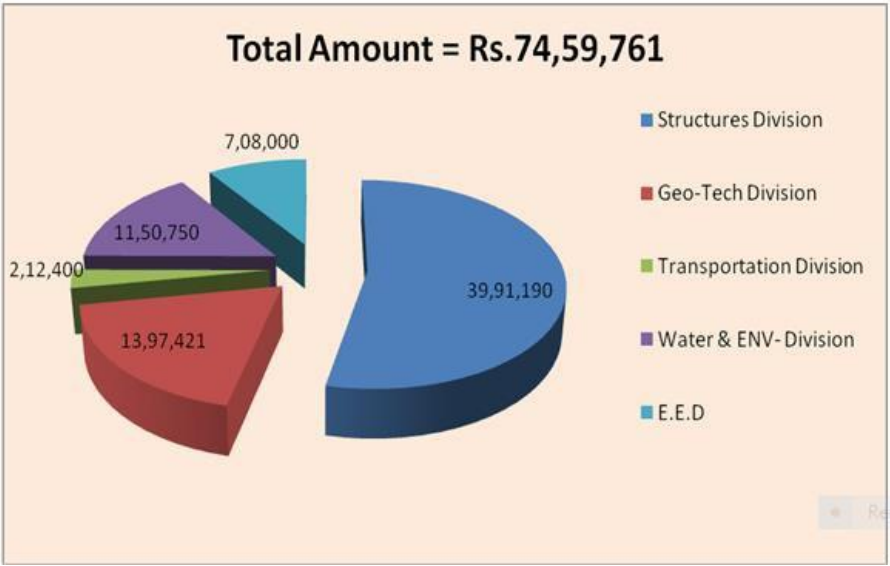


# Research and Consultancy Revenue Generated through Consultancy (SRIC)

## March 2020 – April 2021

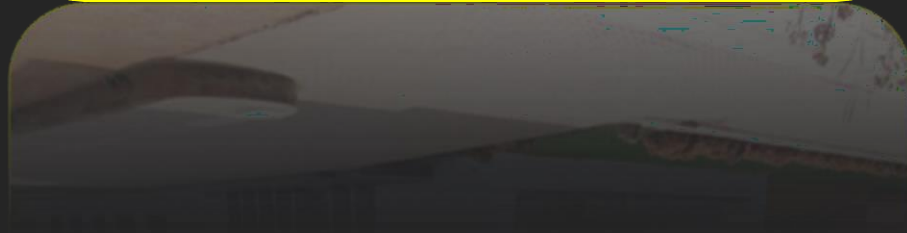


## March 2021 – September 2021



\* Total Grant Received from External Projects for the Financial Year 2021: Rs, 8,28,34,602=00

Placement Report 2020-2021  
Centre for Career Planning and Development  
(CCPD)



<b>Sl. No.</b>	<b>Branch</b>	<b>Total Students</b>	<b>Total Students (Eligible*)</b>	<b>No. of students Placed</b>	<b>Max. CTC (LPA)</b>	<b>Avg. CTC (LPA)</b>
1.	Civil Engineering	99	76	58	15.0	8
2.	Electrical & Electronics Engineering	138	108	94	51.0	15.38
3.	Mechanical Engineering	139	114	92	25.8	9.02
4.	Electronics & Communication Engineering	140	115	105	43.0	14.49
5.	Metallurgical & Materials Engineering	63	50	44	15	8.63
6.	Chemical Engineering	103	86	74	46.0	9.87
7.	Computer Science & Engineering	138	121	118	43.0	20.02
8.	Bio-Technology	55	39	33	13.7	8.75

\*Includes students with CGPA $\geq$ 6.5 and who participated in all Campus Placement Drives. If a Company has offered a job to a student having CGPA $<$ 6.5, it is included in both placed as well as registered counts. Students CGPA considered for eligibility is whatever he/she acquired up to the date of commencement of placement session



## PG Placements

SI.				Total Students			Min. CTC	Avg. CTC
No.	Course	Branch	Total Students	(Eligible*)	No. of students Placed	Max. CTC (LPA)	(LPA)	(LPA)
1		Water Resource Engineering	26	26	2	7	5.25	6.12
2		Environmental Engineering	28	28	2	6	3.5	4.75
3	M.Tech.	Engineering Structures	31	29	12	7	3	5.75
4	(Civil)	Geo-Tech. Engineering	26	24	1	5.25	5.25	5.25
5		Transportation Engineering	31	30	5	6.5	5.25	5.81
6		Construction Technology & Management	31	31	8	8.46	5.25	6.8
7		Remote Sensing & GIS	16	15	4	6.5	4.5	5.4
8	M.Tech	Power Systems Engineering	40	33	11	14.28	5	8.35
9	(EEE)	Power Electronics and Drives	39	33	15	11.5	3.6	6.65
10		Thermal Engineering	24	20	7	8	3.6	5.07
11		Manufacturing Engineering	18	16	2	7.5	5.5	6.5
12	M.Tech.	Computer Integrated Manufacturing	17	15	4	6.5	3.6	4.8
13	(Mech.)	Machine Design (formerly PDD)	18	17	6	9	5	6.66
14		Automobile Engineering	16	14	8	13.51	5.5	7.93
15		Materials & Systems Engineering Design	13	13	4	8	3.6	6.02
16		Additive Manufacturing	10	10	2	11.5	8	9.75
17		Electronic Instrumentation	24	22	11	31.05	8.5	16.5
18	M.Tech	VLSI System Design	25	22	18	31.05	8.5	17.27
19	(ECE)	Advanced Communication System	21	21	9	31.05	6.5	15.33

20	M. Tech.	Industrial Metallurgy	13	12	1	6	6	6
21	(MME)	Material Technology	16	15	3	8	6.25	6.83
22	M.Tech.	Chemical Engineering	18	17	5	6.5	4.4	5.24
23	(Ch.E)	Process Control	13	11	1	8	8	8
24	M.Tech.	Computer Science & Engineering	21	19	17	31.05	9.05	18.69
25	(CS&E)	CS & Information Security	23	20	19	35	7.65	18.2
26	M.C.A.	Master of Computer Applications	45	36	33	22.26	6	10.55
27	M.B.A.	Master of Business Administration	40	34	7	12.53	3.6	6.6
28	M.Sc.(Math)	Applied Mathematics	23	20	1	10.5	10.5	10.5
29		Mathematics & Scientific Computing	27	22	7	11	5.5	7.59
30	M.Sc. (Tech.)	Engineering Physics	35	29	5	7.5	5	5.8
31	M.Sc.(Chem.)	Analytical Chemistry (MMCA)	16	14	5	7	3	4.8
32		Organic Chemistry (DDPP)	26	23	3	9	7.5	8

## Activities by CCPD

1. Maintains an updated data base of over 800 companies to help each student weigh their options when Choosing a company
2. Takes feedback from the employers and by sharing with departments and to frame the course relevant to the industry
3. Nurtures and sustains industry- institute interaction through industrial visits, in-plant training, internships to bridge the gap between industry and academia
4. Organizes and coordinates campus placements activities to provide employment opportunity to every student
5. Organizes career counselling sessions and making the student aware of his potential thereby drives him towards his goal.

# OUR STUDENTS GAINFULLY EMPLOYED AT





## Central Library



Dr. A. Venu Gopal  
Chairman, LAC



Dr. K. Veeranjanyulu  
Librarian



Sri. G. Balakrishna  
Assistant Librarian

### **INTRODUCTION:**

The Central Library at NIT Warangal established along with the Institute's inception, is located adjacent to the administrative block. The library is housed with a plinth area of 4000 Sq. Mtrs (Ground + 2 floors), which includes stack rooms (for the textbooks), reading halls (reference section), current journals/periodicals area (print version), newspaper section, digital library, book banks, and a separate reference area (TEQIP hall). The Central Library supports the regular academic activities of the Institute (teaching, learning and research) by providing necessary books for the students, faculty and non-faculty of the Institute. It also disseminates information according to the requirement of the users of the Institute.

### **MEMBERSHIP:**

Every student (who gets admission to the Institute), Faculty members and regular staff (non-faculty, technical and administrative) of the Institute are the members of the Central Library. They are eligible for lending books, use of the digital library facilities.

## **COLLECTION:**

The Central Library has a good collection of old and new books. The total cost of the books amounts to Rs. 10 Crores.

• Books (No. of Volumes)	: 1,85,218
• Books ( No. of Titles)	: 32,288
• No. of e-Books	235
• No. of e-Journals	7845
• No. of Print Journals	22
• No. of Books in Book Bank	: 30,445

## **SERVICES:**

- ❖ Lending of Books
- ❖ OPAC (Online Public Access Catalogue)
- ❖ Remote Access Service through MyLOFT App
- ❖ Photocopying and Printing Service
- ❖ Document Delivery Service

**Prof. N.V. Ramana Rao, Director, NITW has inaugurated the following new services initiated by the Central Library on 23-10-2020 for the benefit of Faculty and Students.**

## **OPAC (Online Public Access Catalogue):**

The Central Library has implemented KOHA - Integrated Library Management Software to automate library functions. The Online Public Access Catalogue (OPAC) was available only over the Intranet, through which users can browse the catalogue of print resources available in the Central Library at NIT Campus, Warangal. An open-source link to e-books was also provided in this OPAC.

During the prevailing Covid-19 situation, students and faculty could not access open e-resource links provided through the OPAC. Hence, Web-OPAC is implemented using cloud computing to overcome the access problem. Henceforth, the faculty and students can access the open-source link of e-books from anywhere and anytime by using the following link.

<http://nitwopac.in:7071/>

Koha Cart Lists Ask A Librarian

**Central Library**  
National Institute of Technology, Warangal  
Online Public Access Catalogue (OPAC)

NIT Warangal About Guide to subjects User Guide Privileges

Search Library catalog

Advanced search | Authority search | Tag cloud

Home

Library Resources

- e-journals
- e-shodh sindhu
- ACS Journals
- ASTM Standards
- Elsevier
- Emerald Journals
- IEEE Xplore
- Royal Society of Chemistry
- Sage Journals
- SciFinder
- Springer Journals

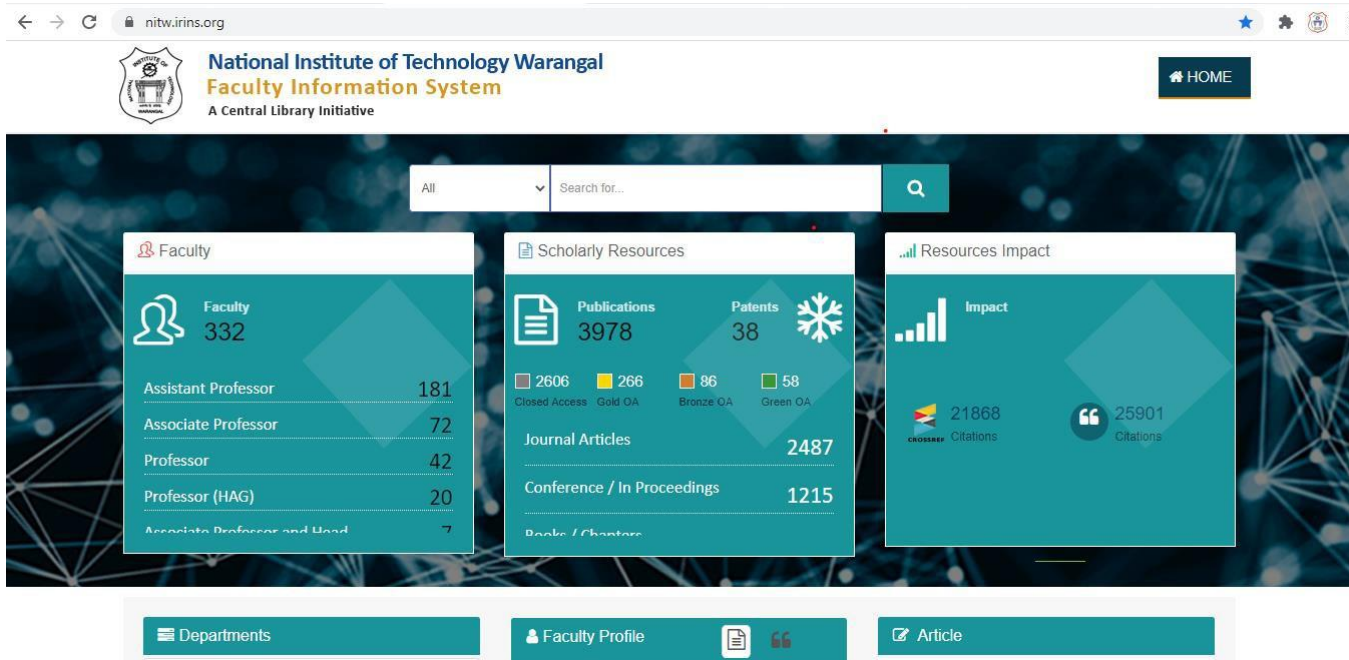
### **NITW- FACULTY INFORMATION SYSTEM: A Central Library Initiative:**

The Central Library has implemented a new "Faculty Information System" under the Indian Research Information Network System (IRINS) to showcase the academic and research activities of the institute faculty members and provide an opportunity to create a scholarly research network.

The NITW- Indian Research Information Network System (IRINS) will integrate the existing research management system such as HR system, course management, grant management system, institutional repository, Open and commercial citation databases, scholarly publishers, etc. This will be integrated with the academic identities such as ORCID ID, Scopus ID, Research ID, Microsoft Academic ID, and Google Scholar ID for ingesting the scholarly publication from various sources. This Faculty Information System can become the source for the NIRF, NAC and other international ranking systems. Everyone can access the Faculty Information System through the following link:

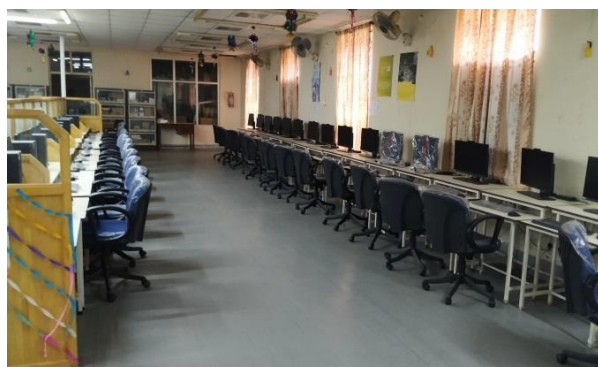
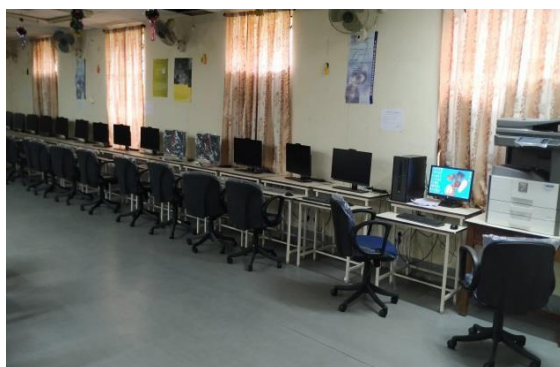
<https://nitw.irins.org/>





### Inauguration of Faculty Information system, Web OPAC and State-of-the-Art Digital Library

**State-of-the-Art Digital Library:** Central Library acquired 20 new all-in-one computers with higher configuration (16 GB RAM and 1 TB HDD) for Digital Library.



### E-JOURNALS:

The Central Library of NIT Warangal is a member of the e-shodhsindhu consortium and subscribes to the online journals through the e-shodhsindhu consortium and from the institute funds. The details of the journals subscribed to by NIT Warangal are as follow.

## NIT, Warangal subscribed e-journals databases

Sl.No.	Name of the Database / Publishers	No. of Journals
1.	TM Standards + Digital Library	Database
2.	Eevier - Science Direct	79
3.	Emerald e-Shodhsindhu	312
4.	Royal Society of Chemistry	46
5.	Materials Science & Engineering Collection	78
6.	Finder Scholar	Database
7.	Springer Link	1714
8.	Taylor & Francis	349
9.	American Chemical Society	64
10.	IEEE	558
	<b>tal</b>	<b>3200</b>

## E-Resources Provided by INFLIBNET through ESS Consortium

Sl.No.	Name of the Database / Publishers	No. of Journals
1.	ACM Digital Library	1153
2.	ASCE Journals Online	36
3.	ASME Journals Online	29
4.	Institute for Studies in Industrial Development (ISID)	Abstract Database
5.	JGate Plus ( JCCC )	Abstract Database
6.	JSTOR	3165
7.	Oxford University Press	262
8.	Web of Science	Database
	<b>Total</b>	<b>4645</b>

## PHOTOCOPYING AND PRINTING SERVICE:

Central Library, NITW provides photocopying and online printing facility to students, research scholars and faculty during working days on payment basis @ 0.50/- (Fifty paise only) per page for Scientific articles and extracts from books NITW Central Library.

## DOCUMENT DELIVERY SERVICE:

Document Delivery Service through which any library member can send a request to the library to obtain photocopies of journal articles not available in our central library. This service is provided free of charge to all library members of NIT Warangal for academic and research purposes only. To avail of this service, library users are requested to send an email with full bibliographic details of the documents (not more than two articles at a time) to cenlib@nitw.ac.in

## BEST PRACTICES:

The Central Library, NIT Warangal follows the best practices such as

- ❖ Circulation of the information brochure to the newly joined students, faculty, and staff.

- ❖ Conducting user orientation programs to the newly joined faculty and students about the facilities available in the Central Library.

### **OUTREACH PROGRAMMES:**

As an outreach activity on behalf of the Institute and the Teaching Learning Centre, the Central Library conducts orientation programs to the faculty of the Degree and PG colleges of the Telangana State and the other states. Also, the Central Library allows using the electronic content (e-journals and e-books) to the resident participants of various faculty development programs and GIAN programs conducted by the Institute.

### **STACK – ROOMS:**

- ❖ There are three stack rooms (with adequate seating arrangements) on the ground floor, of which two rooms are stacked with textbooks and the other with back volumes of journals.
- ❖ According to the Dewey Decimal Classification Scheme, the books and back volumes of journals are arranged on the shelves along with the subject-guides.
- ❖ The Library follows the Open Access System. All the titles of the books are made available through LAN using Online Public Access Catalog.

### **REFERENCE SECTION:**

The section contains reference books such as Encyclopedias, Dictionaries, Directories, Handbooks, Bibliographies, Atlases, and Databases from different publishers. These are to be referred within the Library premises and not for lending.

### **TEXTBOOKS:**

Multiple copies of each prescribed textbook (as per the academic curriculum) and other recommended books are kept in the textbook collection. These are to be referred to on the Library premises only.

A separate reading hall (funded by TEQIP-I) for reference and textbooks is provided with a seating capacity of 100 members.

### **PRINT JOURNALS and MAGAZINE SECTION:**

The Library receives about 22 Print journals and magazines. All the current periodicals are displayed on the periodical racks in the reading hall with a seating capacity of 100.

### **LIBRARY ADVISORY COMMITTEE:**

The library advisory committee (LAC) comprises a Dean Academic as Chairman, faculty members from each department as members and Librarian as Member Secretary. The LAC is the supreme body to monitor the functioning of the library. The LAC is the decision-making body for the policies and purchases of the library in accord with the Institute administration. It meets from



time to time to lay down policies and to review working conditions for the smooth functioning of the Library.

#### **FACULTY DEVELOPMENT PROGRAMME:**

1. A Five-Day Online Faculty Development Programme on "Modern Digital Library Science & Technologies for Teaching, Learning and Research (MDLSTTLR – 2021)" organized from 4th to 8th January 2021 organized by the Central Library, NIT Warangal in association with the Teaching Learning Centre, NIT Warangal.

#### **WEBINARS:**

1. Central Library, National Institute of Technology, Warangal, has organized a Webinar on "Web of Science: Discovery starts here!" on 16<sup>th</sup> October 2020 from 11:00 a.m. to 1:00 p.m. in collaboration with Clarivate for the benefit of Faculty, P.G. and Ph.D. Students.
2. Central Library, National Institute of Technology Warangal has organized a Webinar on "Elsevier: Improve scholarly visibility and impact of NITW" on 22<sup>nd</sup> February 2021 at 3.00 p.m. in collaboration with Elsevier for the benefit of Faculty, Research Scholars and P.G. Students.

#### **RECOGNITION OF EXCELLENCE 2020:**

Central Library, NITW received the "Recognition of Excellence 2020" award from Taylor & Francis Group for adapting and contributing to the growing needs of online education in India.

#### **LIFE TIME ACHIEVEMENT AWARD:**

Dr. K. Veeranjanyulu, Librarian, National Institute of Technology, Warangal, has been honored with the prestigious "Life Time Achievement Award" by the Association of Agricultural Librarians and Documentalists of India (AALDI), one of the oldest professional societies in India, during the inaugural programme of Golden Jubilee Celebrations and International Conference of Agricultural Librarians and User's Community (ICALUC-2021) on 'Management of Knowledge Resource Centres: Trends, Challenges and Opportunities' organized on 25<sup>th</sup> February 2021 held at University of Agricultural Sciences. He was selected for this award "in recognition of his three decades of dedicated service to agricultural librarianship, leadership quality, commitment and service with the highest standard of excellence". Dr. S. Ayyappan, Chancellor, Central Agricultural University, Imphal and Chairman, Karnataka State Science Academy, honored him with the award in the presence of Dr. S. Rajendra Prasad, Vice-Chancellor of UAS.

#### **INVITED TALK AND WEBINAR DELIVERED:**

Dr. K. Veeranjanyulu, Librarian, National Institute of Technology, Warangal has delivered more than twenty-five Invited talks and Webinars on various subjects during the period of the report.

## **INVITED TALK AND WEBINAR DELIVERED:**

Dr. K. Veeranjanyulu, Librarian, National Institute of Technology, Warangal has edited two books; published two research papers in Scopus indexed, national and international journals and presented one of paper in international conference.

### ***Edited Books:***

**Veeranjanyulu, K.**, Rathinasabapathy, G., Jadhav, U. S., Kandpal, K. N., Tandel, Kailash D. (2021) "Dynamics of Agricultural Library and Information Services", Agri-Biovet Press, New Delhi (ISBN: 978-93-84502-96-6)

Rathinasabapathy, G., **Veeranjanyulu, K.**, Srinivasa, V. (2021) "Management of Knowledge Resource Centres in the Networked Digital Environment: Trends, challenges and Opportunities", BS Publications, Hyderabad (ISBN: 978-93-90211-65-4)

## **OPEN ACCESS RESOURCES:**

Central Library collected Open access e-books and e-journals each academic department-wise and communicated to the Heads of the departments for the benefit of students and faculty. Open access resources links uploaded in the Library OPAC. Total No. of E-Books is 13,618 and E-Journals are 5,357.

## **PROCUREMENT OF E-BOOKS:**

Central Library procured 146 e-books titles for the financial year 2020-21 as per the recommendations of the Heads of Departments. The e-books access links are communicated to all the faculty members. Further, it informs that the e-books can access from MyLOFT App anywhere and anytime.

## **INSTITUTIONAL REPOSITORY:**

The Central Library NIT Warangal has created the NITW Institutional Repository to showcase, organize, share, and preserve the scholarly output of the National Institutes of Technology Warangal. The Repository is designed to facilitate scholarly communication by providing access to the knowledge resources created by NITW and preserving the same for future generations of scholars. The Central Library is proud to host and maintain the repository and facilitate access to the knowledge resources of the NITW community. The Institutional Repository is Available on Intranet through the link.

<http://ir.library.nitw.ac.in:8080/jspui/>

## **NITW – ANNUAL RESEARCH DIGEST OF PH. D THESES 2019-20:**

The Central Library brings the "Annual Research Digest of Ph. D Theses of NITW" for the benefit of Students, Research Scholars, and Faculty to know the Doctoral Research work completed in the Institute and identify the research problems for their research work.

# NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL

## TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME PHASE III

### About TEQIP III

#### About NPIU

**National Project Implementation Unit** (NPIU) is a unit of Government of India, established in August 1990 for coordination, facilitation, monitoring and to provide guidance to the States/Institutions in all aspects of the World Bank assisted projects. During 1991 to 2007, NPIU implemented three Technician Education Projects of Government of India assisted by the World Bank, which helped to strengthen and upgrade the Technical Education System and benefited 552 Polytechnics in 27 States including UTs of Andaman & Nicobar Island and Pondicherry. These three Projects have been rated as "Highly Satisfactory" on Project Management and implementation, which is the highest rating, provided by the World Bank. Success of three Technical Education Projects encouraged the Govt. of India to seek similar financial assistance from the World Bank for a systemic transformation of the Technical Education system as a whole with special focus on overall Quality Improvement in Engineering Education.

On the basis of excellent performance by NIT Warangal in TEQIP-I and TEQIP-II phases, the MHRD through NPIU has sanctioned the TEQIP-III project to NIT Warangal in the year 2017-18 with a budget outlay of Rs.7.0 Crores. This Project will further improve the quality of Post-Graduate teaching, catalyze the R&D activities, promote the Faculty and Staff development and provide academic support for the students. The Project Implementation and Monitoring Committee of TEQIP-III at NITW has prepared a procurement plan and obtained its approval by the NPIU. The plan is now put into operation. A series of Continuing Education Programs, Workshops, Seminars and Conferences spreading across the wide spectrum of Engineering Disciplines are initiated to disseminate the knowledge in the state of art technologies and build professional competency in the students and faculty. NIT Warangal has established twinning arrangements with Chaibasa Engineering College, Chaibasa, Jharkhand State in order to build their capacity and improve the performance. Our Institute has got very good grade based on the Monitoring and Project output Performances



**Prof. A. Venu Vinod**  
**Coordinator, TEQIP-III,**  
**Professor,**  
**Chemical Engineering Department**

## 1. Innovation and startups:

- i.) Entrepreneurship and Design Thinking Workshop for students was conducted in the month of February 2021, followed by a competition.
- ii.) Open source and product development workshop was conducted in February 2021, followed by a competition for students.
- iii.) Block Chain and AI workshop was conducted in February 2021, followed by a competition for students.
- iv.) Ideathon week was organized in March 2021, to provide a platform for students to present their ideas and develop their entrepreneurial skills, finding business viability and prototyping their products.

## 2. Support for Students (UG, PG, Ph.D.) under Research and Development:

About 07 students benefited in purchase of Chemicals, Spares and consumables in their student research project.

## 3. Light Board Setup:

A Glass Light board can be used for recording of chalk and talk kind of video lecture as part of asynchronous mode of delivery of classes. So, in this regard TEQIP has taken initiative and sponsored a project for implement of Light board and its studio setup in institute.

**Glass Lightboard:** The lightboard is a piece of ultra-clear glass that is edge light with LED strip lights. The presenter writes on the lightboard with a neon marker.

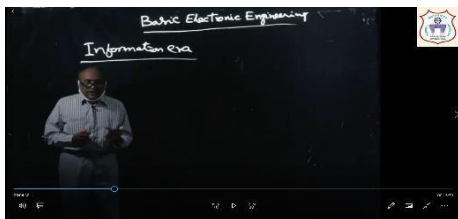
The light bounces around inside the glass until the light hits the neon marker writing and then exits the glass through the marker. This makes the writing really pop out against the black backdrop. The lightboard can be used to teach concepts that require formulas, calculations, diagrams and not too much text. Lightboard videos are very quick to make with minimal post production. So, they are also helpful when a lot of videos need to be made in a short period of time. Students would prefer learning from light board videos because the experience is very much similar to the instructors teaching using the whiteboard. But it is even better because the students get to see the teacher's face.

**Studio setup for Glass Lightboard:** the studio required for the usage of Glass Lightboard which can be used for recording of chalk and talk kind of video lecture as part of asynchronous mode of delivery of classes.

## 4. NPIU Sponsored ERP Implementation:

NPIU/MHRD in technical collaboration with IIT Kharagpur is developing ERP software – SMILE (Software for Managing Institute of Learning and Education) for NIT Warangal. This project is being sponsored by TEQIP/ NPIU.

**5. Improvement of sanitation conditions as part of EMP:** Sanitation is an important aspect of Environment Management Plan. In order to maintain good sanitation conditions in the campus. Napkin vending machine in Girls common room and Incinerator for managing the used napkins were provided in the Ladies Hostel.



Professor C B Rama Rao delivering lecture on Lightboard



Lightboard Studio, 009, Department of Chemical Engineering & Biotechnology Building (New), NITW

## 5. Activities:

### (i.) CEP's/Workshops/Conferences conducted from 01.07.2020 to 30.06.2021 under TEQIP - III

Department Name	Continue Education Program	International Conference	National Conference	Symposium	Workshop	Grand Total
Civil Engineering Department					3	3
Electrical and Electronics Engg. Dept.					1	1
Mechanical Engineering Dept.					1	1
Electronics and Communication Dept.					2	2
Computer Science and Engg. Dept.					1	1
Dean SW					2	2
TEQIP-III		1				1
<b>Grand Total</b>		<b>1</b>			<b>10</b>	<b>11</b>

### Induction Program conducted under TEQIP – III from 02.12.2020 to 07.12.2020

Sl. No	No of Days	Type of Program	From Date	To Date	Month	Title of the Program	Coordinator
1	06	Induction Program	02.12.2020	07.12.2020	Dec 20	Induction Program for New Entrants of I B.Tech 2020 Batch	Prof. J V Ramana Murthy

- Expert Lecture by **Shri K. Ramalingam**, Director, SVL Engineering Services Pvt Ltd., delivered expert lecture on "An Outlook and Brief Walk Through Some Incidents Emphasizing the Importance of PSM" on 07<sup>th</sup> November, 2020.
- Expert Guest lecture by **Dr. MP Raju**, MD LASA, New Delhi on "Planning for Urban and Regional Transport Systems – Insights and Way Forward" on 28<sup>th</sup> October 2020.
- Expert Guest lecture by **Dr. TS Reddy**, Team Leader LASA, Hyderabad on "Road Safety Audit for Improved Safety on Roads" on 04<sup>th</sup> November 2020.
- Expert Guest lecture by **Sri PPK Murthy**, Director (projects) Metro, Mumbai on "Infrastructure Development Challenges in India – Role of Transportation Engineers and Planners" on 11<sup>th</sup> November 2020.

5. Expert Guest lecture by **Sri MP Naidu**, Former Project Director, L&T Metro Rail, Hyderabad on "Mass Rapid Transport System – A Case Study of Hyderabad Metro" on 18<sup>th</sup> November 2020.
6. Expert Guest Lecture by **Sri RK Jha**, Senior Advisor and Project Director (Corporate Projects), CIDCO, Navi Mumbai on "Concept to Development of Large Transportation Projects: A Case study of Mumbai Trans Harbour Link" on 25<sup>th</sup> November 2020.
7. Expert Guest Lecture by **Sri DB Srinivas** Associate Vice President Transportation Planning, DMITS, New Delhi on "Socio-Economic cost of Road accidents in India" on 02<sup>nd</sup> December 2020.
8. Expert Guest Lecture by **Sri M Kishore Kumar** Director Aarvee Associates, Hyderabad on "Prevention of Clams & Disputes in Highway Contracts" on 09<sup>th</sup> December 2020.
9. Expert Guest Lecture by **Sri KV Ganesh Babu**, DMITS, New Delhi on "Planning and Design of Greenfield Cities: Case Studies of GIFT and Amaravati" on 16<sup>th</sup> December 2021.

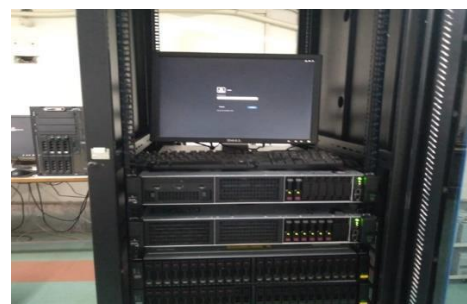
Major Equipment Procured under TEQIP III			
Item	Department	Month/Year	Amount in Rs.
Atena Software	Civil Engineering Dept.	Feb 2021	11,97,000.00
Fume Hood for laboratory with cupboard	Chemical Engineering Dept.	March 2021	1,01,000.00
Microwave Extraction System	Chemical Engineering Dept.	March 2021	4,72,500.00
Computers (All in one PC)	Library	March 2021	15,09,960.00
Heavy Duty color printer	TEQIP	March 2021	2,26,200.00
COMSOL Multiphysics Software	Chemical Engineering Dept.	March 2021	12,68,190.00
Rack Server	Institute MIS	March 2021	8,59,200.00



Fume Hood



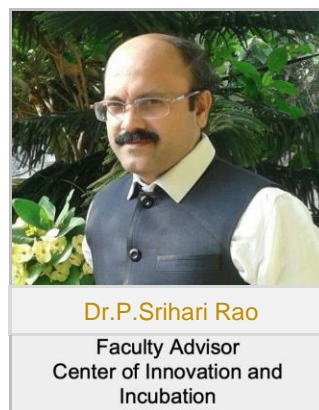
Microwave Extraction



Rack Server



## Centre of Innovation and Incubation



The Center of Innovation and Incubation (CII) is a G+2 building, with a floor space of approx 30,000 sq ft. The mission of the center is to “promote innovations leading to new processes, products, design and technologies in collaboration with industry and thereby facilitate application of knowledge to society”. The following are the objectives of the center

- To promote greater industry - academic interaction, by inviting industries to set up their research labs at this center and carry out their research projects using the talent on the campus.
- To encourage the first-generation entrepreneurs desirous of R&D partnership with NITW or otherwise to establish their research labs at this centre.
- To promote innovation projects of B.Tech and M.Tech students by providing appropriate facilities, infrastructure and financial assistance as per the norms of the institute.
- To facilitate the “on campus interaction” between the scientists of industries and faculty and students of NITW in order to enable orientation of R&D activities of NITW to potential needs of industry.

NIT Warangal being a premier technical institution plays a vital role in the process of technology entrepreneurship by offering a variety of services through CII in the area of startup creation, business incubation, easy access to capital and knowledge access with new and innovative ideas. Moreover, emphasis has also been given by the institute towards entrepreneurial focused education by providing entrepreneurship development and venture creation as elective courses for developing entrepreneurial competencies. Further, various support mechanisms were also provided in the form of structured mentorship programs, short training to build the confidence of students to convert ideas to innovation and startup establishment. Incubation facilities are also open for local startups in and around as social responsibility at minimal expenses, thereby contributing significantly in promoting the entrepreneurship culture in institutes and within the country. The CII facilitates the following at preset

- Startup Cell
- Innovation Garage
- Industry R&D Labs
- EPICS Projects & TEP
- IPR Cell
- MoUs (National)

### Startups

Student startups are current requirements and provide a great opportunity in market expansion and job creation. Startup policy of NITW targets to nurture and encourage entrepreneurship among students and young faculty to benefit from GOIs ‘Startup India’ and ‘Make in India’

programs. Students are encouraged to participate in idea generation in prototype events and the funding is provided to procure the hardware required through TEQIP-III.

<b>Startup Name</b>	<b>Founder/CEO</b>
Flowhrex Technologies	<ul style="list-style-type: none"> <li>● Mr. Abhijeet Kulkarni</li> <li>● Mr. Amol Raykar</li> </ul>
Aufenbach	<ul style="list-style-type: none"> <li>● Mr. Mohamed Azman</li> <li>● Mr. Jithu G Panicker</li> </ul>
Cusmat	<ul style="list-style-type: none"> <li>● Mr. Abhinav Ayan</li> <li>● Mr. Soumya R. Harichandan</li> </ul>
Dhour Davakhana	<ul style="list-style-type: none"> <li>● Dr. M. Satish, ECE Dept.</li> </ul>
VaSuDa GeoAnalytics	<ul style="list-style-type: none"> <li>● Dr. K. Venkat Reddy, Civil Dept</li> <li>● Ms. Sunitha</li> </ul>
GBit Studios LLP	<ul style="list-style-type: none"> <li>● Mr. Aniruddha Joshi</li> </ul>
Skylark Labs	<ul style="list-style-type: none"> <li>● Dr. Amarjot Singh</li> </ul>
Sigma Store	<ul style="list-style-type: none"> <li>● Mr. Vaibhav Goyal</li> <li>● Ms. Nikita Singh</li> <li>● Mr. Anmol Sahu</li> </ul>
Kalam Books	<ul style="list-style-type: none"> <li>● Mr. Kalp Shobhana</li> <li>● Mr. Anushrestha Chourey</li> </ul>
Ayurdeep Healthcare Solutions	<ul style="list-style-type: none"> <li>● Ms. B. Deepthi</li> </ul>
Bugclaim	<ul style="list-style-type: none"> <li>● Aakash Kumar</li> <li>● Arpit Goyal</li> <li>● Ankush Mittal</li> </ul>
Hacktric	<ul style="list-style-type: none"> <li>● Ms. Manhi Panwar</li> <li>● Ms. Ashiqa Rahman</li> </ul>
Epick Bikes	<ul style="list-style-type: none"> <li>● Mr. Sai Aaradh Vemula</li> <li>● Mr. L. N. V. Ravi Teja</li> <li>● Mr. Bharath Goud</li> </ul>

	<ul style="list-style-type: none"> <li>• Mr. Rahul Reddy Edla</li> <li>• Mr. Vamsi Krishna Reddy Sabbella</li> <li>• Mr. Anand B Tumuluri</li> </ul>
City 360	<ul style="list-style-type: none"> <li>• Mr. Devdutt Chavda</li> </ul>
Archphilic	<ul style="list-style-type: none"> <li>• Mr. Shubham Saxena</li> </ul>
Bukket.cloud	<ul style="list-style-type: none"> <li>• Mr. Himanshu</li> </ul>
Opaqure	<ul style="list-style-type: none"> <li>• Mr. Gnaneshwar Sampathirao</li> </ul>
Open Innovation Platform	<ul style="list-style-type: none"> <li>• Mr. Avinash Pulugurtha</li> </ul>
Design and Marketing Collective	<ul style="list-style-type: none"> <li>• Mr. Avinash Pulugurtha</li> </ul>
Ideate	<ul style="list-style-type: none"> <li>• Mr. Rithik Marudappa</li> <li>• Mr. Lakshya Jalan</li> </ul>
YOWL	<ul style="list-style-type: none"> <li>• Mr. Sushyanth Sridhar</li> </ul>
AI Psychometric Test	<ul style="list-style-type: none"> <li>• Ms. M.Keerthi</li> <li>• Mr. Tushar Rathore</li> <li>• Mr. Pratik Kaul</li> </ul>

### **Innovation Garage**

The CII provides a platform for the students to carry out innovative projects through Innovation Garage (IG). Innovation Garage is a multidisciplinary 24x7 makerspace for students to work on innovative projects and develop prototypes. IG organizes activities all year long for promotion of innovation and maker culture on campus including Makerswave, Ideathon, Case Study Competition, Design Thinking Workshop etc. to name a few. We have several student teams working on projects with societal impact in the field of AI, Blockchain, Robotics and Cybersecurity.

### **Mechanical Vehicle Teams at CII**

CII provides space and equipment to the mechanicals and sport cars teams to design and manufacture their vehicles.

- Team Ronin Racing (Electric F1)
- Team Spardhak (BAJA)
- Team Thunderbolt (Efficycle)
- Team MecXaushters (Formula One)
- Team Mechaholics (Quad Bike)

- Team Tejas (Electric Go-Kart)
- Team Blitzkrieg (Go-Kart)

## Events at CII

CII conducts events all year around with engagement of over 4000+ students. Here are a glimpse of some of the events, workshops, guest lectures and makeathons.

S. No.	Event	Date(s)	Participation
1	Summer AI Program	12 April - 20 May 2020	160+
2	Git and Open Source Workshop	27 September 2020	160+
3	Devathon	1 - 3 October 2020	120+
4	Webinar on AI and ML in cognitive games	11 October 2020	95+
5	Flutter Workshop for App Development	23 October 2020	110+
6	Webinar on Product Development (BYJU'S)	7 November 2020	120+
7	Intro to GameDev Workshop	8 November 2020	110+
8	Webinar on Child Psychology	8 November 2020	110+
9	Webinar by NTU	14 November	80+
10	Webinar on Master's Program in USA	15 November 2020	120+
11	Open Innovation Challenge Hackathon	21 - 22 November 2020	90+
12	Webinar by Epick Bikes	1 December 2020	135+
13	Orientation	6 December 2020	1200+
14	Open House for First Years	27 December 2020	1500+
15	Design Thinking Workshop	28 December 2020	170+
16	Open Source Fest	31 December 2020	70+

	Eduthon	12 - 13 January 2021	85+
17	Webinar on Leadership and Career Growth	17 January 2021	50+
18	Semester Exchange Program (SemEx)	17 February 2021	90+
19	Impact Tank	16 - 26 March 2021	340+
20	Phantom CTF 4.0	16 March 2021	2100+
21	Social Engineering CTF	17 March 2021	1800+
22	Summer AI Program	12 April - 6 August 2021	180+
23	Women in Innovation	18 April 2021	70+

## Achievements and Milestones

### ARIIA – Participation and Rank

'B and A' institution (rank between 11-25) in the category of 'Institute of National Importance, Central Universities & CFTIs'.

### Open Innovation Challenge

In line with Atma Nirbhar Bharat Abhiyan, CII, NITW conducted an Open Innovation Challenge for students and startups for developing apps and toys for children to help in their learning.

### Smart India Hackathon

Smart India Hackathon SIH, the world's biggest open innovation platform, is a nationwide initiative by the Ministry of HRD and a platform for the students to offer innovative solutions for pressing problems we face in our daily lives. NIT Warangal was chosen by MHRD as one of the 45 nodal centres across the country to organise the Grand Finale-2019. 32 student teams (200 students), 60 mentors and judges from across the country participated in the event.

For the AG344 PS given by Mathworks, the student team from NITW were declared winners after one college round and three national rounds.

- Sreemukh M
- Abhiram K
- Rajesh R
- Ruchita K
- Varun K
- Apoorva C

## Winja Security Competition

Nullcon is an extensive platform for the exchange of information about zero-day vulnerabilities, the latest attack vectors, and other cyber threats. Here, security researchers and experts from various fields discuss information security, along with showcasing multiple offensive and defensive security technologies.

NITW's CybSec Team girls secured 9th rank all over the world in Winja Security Competition, a hacking competition for girls.

- Spandana Ratnala
- S Harika
- Meghana Pasikanti

## Road To Shine

Road To Shine was a collaborative innovation program between T-Hub and Hiroshima Prefecture in Japan. The competition consisted of two phases, one to be held in India and the next in Hiroshima. The first phase had three rounds of selection with webinars and workshops in between to guide students towards human-centric product design.

*Team Annokriya* participated in the final presentation of the Road2Shine competition at T-Hub, Hyderabad. They were among the top 3 teams selected for working with Japanese companies. Annokriya worked with Torehan in developing a Garbage annotation app for Japanese people to get social points in return for social points.

Team Annokriya:

- Sarthak Kapoor

*Team Enlightened Minds* qualified for the second round of the Road2Shine competition. Their project aims to create awareness about career guidance amongst students and create a model that gives structure to the same and makes the process easier, long-term and affordable.

Team Enlightened Minds:

- Bristi Panja
- Malvika Singh

Achievements	Number
Number and different types of I&E and IPR activities conducted	19
Number of student and faculty ideas generated	21
Number of student and faculty innovation/prototypes developed	19
Number of IPs generated, published, granted and in review	Generated - 28 Published- 2



	Granted - 4 In review - 22
Number of student and faculty start-ups/ventures established	9
Amount spent on promotion and awareness generation on innovation entrepreneurship in the campus	1,50,000 INR
Amount grant or fund supported to student and faculty led innovations, start-ups and IPR	2,25,000 INR
Number of technology transfer and commercialisation happened	11

### Patents

S. No	Date	Patent Name	Patent Applicant Name	Patent No.	Department	Patent Nation	Patent Status
1	01.01.2020	Prefabricated Mesh as Longitudinal Core Reinforcement in Reinforced Concrete Members	Prof. C. B. Kameswara Rao	202041003566A	Civil		Application Published
2	01.01.2020	A Novel Means of Anchorage Reinforcing Bars in Reinforced Concrete Members	Prof. C. B. Kameswara Rao	202041005177A	Civil		Application Published
3	06.01.2021	Method of Waste Water Treatment by Hydrodynamic Cavitation Coupling with Hydrogel Adsorption	Dr. Shirish H. Sonawane	202141007302	Chemical		Application Filling
4	09.07.2020	A Dual DC- Power Supply Based Four-Level Open-End Winding Induction Motor Drive with a Flying Rectifier-inverter Combination	Prof. V. T. Somashekar	201741032892	EEE		FER

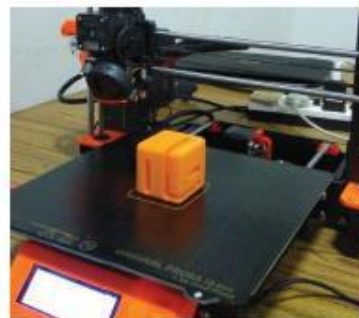
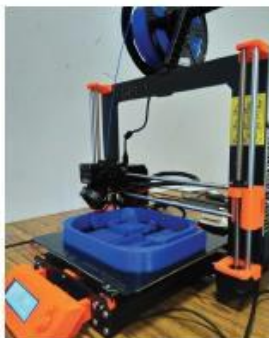
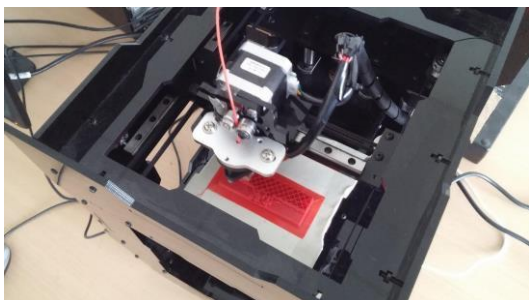
5	03.09.2020	Particle Size Reduction of Pharmaceutical Material/Drugs using Innovative Crystallization Process	Dr. Shirish H. Sonawane	201841033163A	Chemical		FER
6	06.10.2020	Pickling and Polishing Chemicals for Blank Coins and its Process Thereof	Dr. Shirish H. Sonawane	201741036100	Metallurgy		FER
7	06.10.2020	Dispersion of Nanoparticles into Binder and Plasticizer Matrix and its Process Thereof	Dr. Shirish H. Sonawane	6001/che/2015	Chemical		Patent Renewal
8	08.12.2020	An IP Core for Real Time Image/Video De-hazing Applications	Dr. Ravi Kumar Jatoth		ECE		Application Filling
9	29.12.2020	Process for Production of Nano Size Iron Oxide Pigment	Dr. Shirish H. Sonawane	490/CHE/2014	Chemical		Patent Granted
10	15.01.2021	Hovomarine	Sh. Pothineni Srinivasa Rao	4924/CHE/2013	Chemical		Patent Granted
11	01.02.2021	Particle Size Reduction of Pharmaceutical Material/Drugs using Innovative Crystallization Process	Dr. Shirish H. Sonawane	201841033163A	Chemical		Patent Granted
12	01.03.2021	Process for Production of Nano Size Iron Oxide Pigment	Dr. Shirish H. Sonawane	490/CHE/2015	Chemical		Patent Renewal
13	01.03.2021	Particle Size Reduction of Pharmaceutical Material/Drugs using Innovative Crystallization Process	Dr. Shirish H. Sonawane	201841033163A	Chemical		Renewal
14	01.03.2021	Helical Interlock System For Rapid Erection Of Pre-Case Members	Prof. C. B. Kameswara rao	201841039017A	Civil		FER

15	10.03 .2021	Fast And Robust Vector Machines	Dr.Kadambari		CSE	Australi an	Approval for IP application
16	18.03. 2021	Electronic Jacquard Machine for Handloom Sector	Dr.Kota Naga Srinivasarao Batta		CSE		Approval for IP Application
17	30.03. 2021	Pickling and Polishing Chemicals for Blank Coins and its Process Thereof	Dr. Shirish H. Sonawane	201741036 100	Metallur gy		Patent Granted
18	05.04 .2021	Covid:Masked Face Identification	Dr.Kadambari		CSE	Australi an	Approval for IP application
19	27.07 .2021	Design of Farnesol Based Novel Cationic Lipids as Drug and Biomolecule Delivery Vectors	Prof. P. V. Srilakshmi		Chemis try	Australi an	Approval for IP application
20	02.08 .2021	Solar-Assisted Peltier-Based Cold Storage for Horticulture Crops	Dr.Jaya Krishna Devanuri		Mech	Australi an	Approval for IP application
21	03.08 .2021	Increased Sustenance of Vaccines & Medical Containments by Hybrid Cold Storage	Dr.Jaya Krishna devanuri		Mech	Australi an	Approval for IP application
22	03.08. 2021	Telehealth Care System	Dr. V. Rama		ECE	Australia n	Approval for IP application
23			Prof. C. B. Rama Rao				
24	06.08. 2021	Method Of Waste Water Treatment By Hydrodynamic Cavitation Coupling With Hydrogel Adsorption	Dr. Shirish H. Sonawane	202141007 302	Chemical		FER
25	09.08. 2021	Mesh As Transverse Reinforcement In Reinforced Concrete Members	Prof. C. B. Kameswara Rao	201941038 059A	Civil		FER

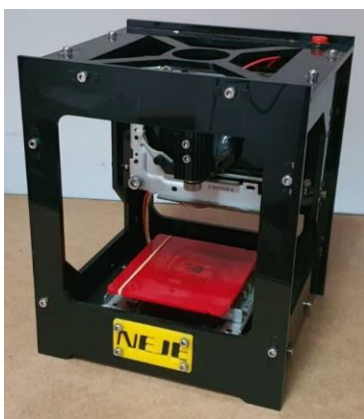
26	09.08.2021	Prefabricated Mesh As Longitudinal Core Reinforcement In Reinforced Concrete Members	Prof. C. B. Kameswara Rao	202041003566A	Civil		FER
27	18.08.2021	Functionalization Of Carbon Nanotubes With 4',7-dihydroxyflavone Exhibit Better Efficacy Against Leishmania Parasites	Dr. Prakash Saudagar, Mr. Santhanu Sasidharan		Biotech	Australia n	Approval for IP application
28	17.08.2021	A Flipped Voltage Follower (FVF) Based Low Drop-out Regulator Using Voltage To Time Converter For Next Generation SOC Nodes	Mr. K. Krishna Reddy, Dr. Sreehari Rao Patri		ECE	Australia n	Approval for IP application
29	17.08.2021	Identification of Duplicate Security Vulnerabilities Using Machine Learning	Mr. Akash Kumar			Australia n	Approval for IP application
30	19.08.2021	Real Time Mal-Nutrition Tracking in Underprivileged Children	Mr. Saurabh Shukla		Chemical	Australia n	Approval for IP application
31	24.08.2021	Application of Flow Profile and Blade Design in Creating a Compact Mechanical Dishwasher	Mr. Katakam Vishnu Sree Shantahnu		Mech	Australia n	Approval for IP application
32	25.08.2021	Intelligent Patient Emergency Management System	Mr. Shritej Sahebrao		Electrical	Australia n	Approval for IP application

## Equipment and Resources

### 3D Printer



### Laser Engraver



### GeForce GTX 1070 Ti Graphics Card

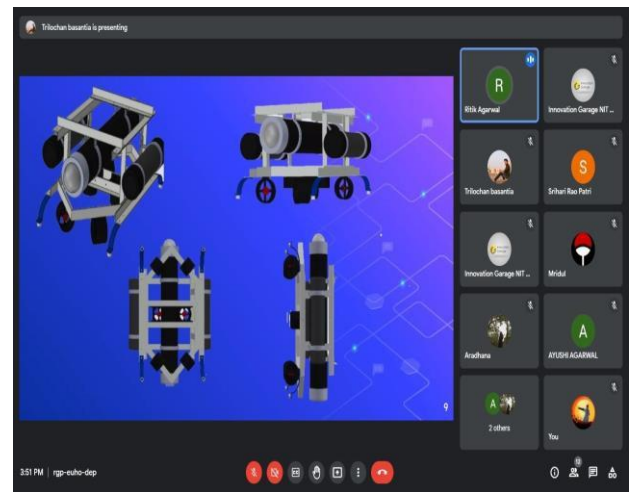
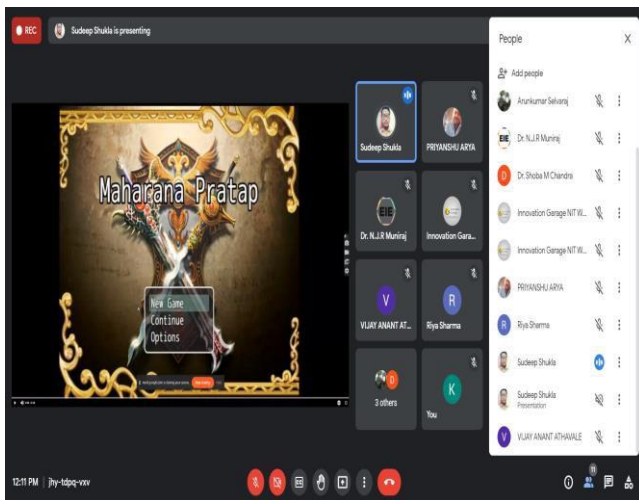
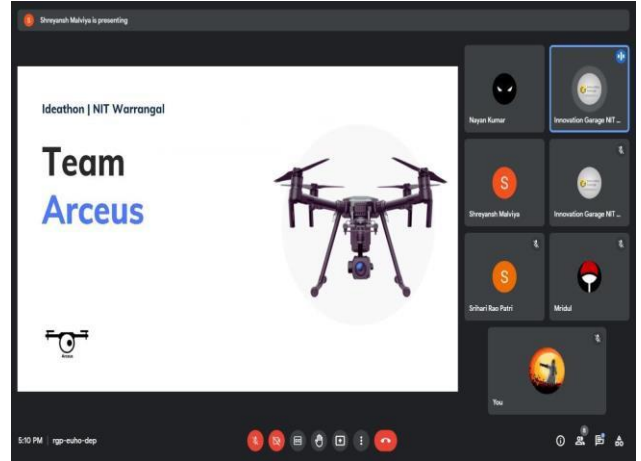
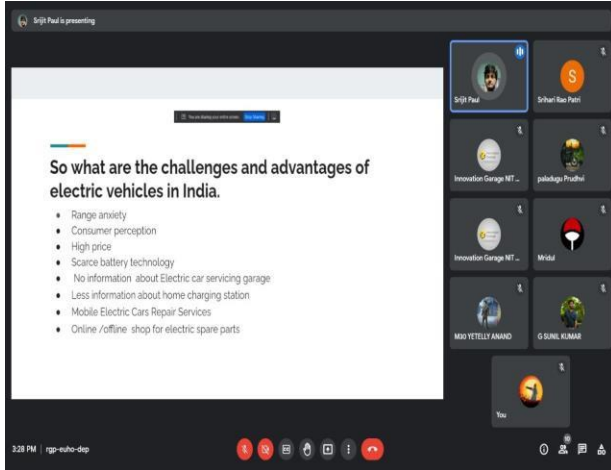
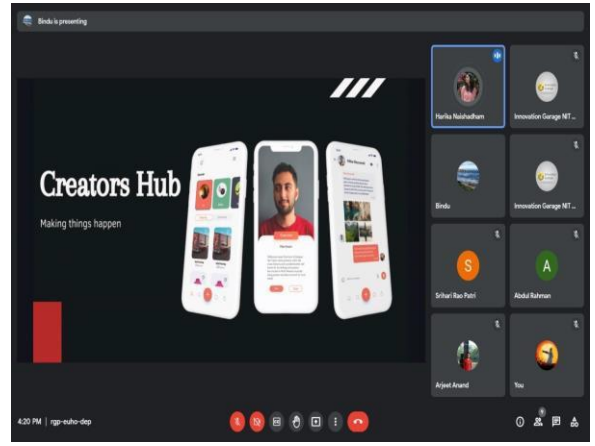
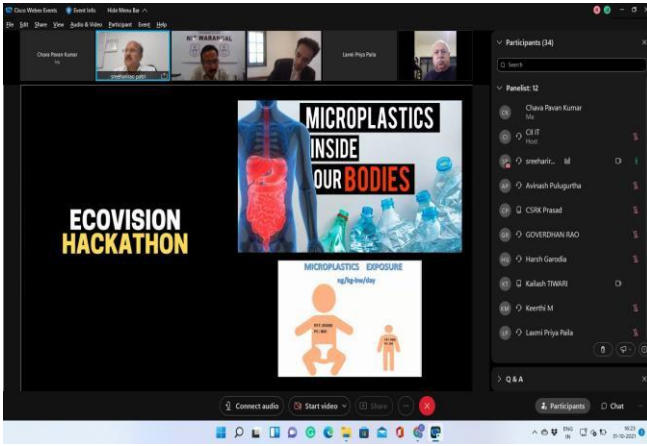


Team Name	Team Members	Idea Brief
Praykatha	Srujan Pulakish Sengupta, Gaurav Kumar Singh, Chandan Kumar Singh, Chandan Kumar Singh	Hybrid solution for Security, Monitoring and Managing Database systems using IoT and Device Fusion.
Dodge-Grain	Laurel Pooja Pali	Online platform that adds value to every touchpoint point of a participant's life.
PrePair	Anshul Saha, Anshu Kumar, Anshu Kumar, Anshu Kumar	Monitoring platform for students of NITW to gain value from seminars and subject topics.
Cloud-Campus	Aditya Saha, Anshu Kumar, Anshu Kumar, Anshu Kumar	new step platform for all college communication.

**TWO-YEAR ACTION PLAN**

2021: Intro Phase 1 (Begin with mentoring sessions and development of platform)

2022: Intro phase 2: Launch of platform and courses (Gather feedbacks and work on technicalities of platform)





# DEPARTMENT OF CIVIL ENGINEERING

## Brief History of the Department, Academic Programs

*The Department of Civil Engineering was established in 1959, along with the setting up of the Regional Engineering College Warangal (RECW), the first among the chain of REC s. The department offers undergraduate and eight graduate programs in addition to Ph.D. Almost all programs are NBA accredited in compliance with the Washington Accord.*


*The department has highly qualified and committed faculty members who are well recognized and are members of many national and state level policy making and advisory bodies. The department of civil engineering has the honour of being recognized as QIP centre since 1978, to offer graduate and Ph.D. programs to faculty of other technical institutions.*

*Recently the curriculum revision has been completed for B.Tech and all M.Tech programs. The concept of Honors program for B.Tech in Civil Engineering and Minors in allied programs has been introduced. Several PG-Diploma and self-financed programs have been introduced in the existing specializations.*

*The department aspires to be a knowledge nerve centre in Civil Engineering Education, Research, Entrepreneurship and Industry outreach for creating sustainable infrastructure and enhancing the quality of life. This will be achieved by generating a specialized cadre of Civil Engineers by imparting quality education and training to attain International standards in teaching, research and consultancy with global linkages.*



## Faculty Details



S. No.	Name of the Faculty Member and Designation	Highest Qualification	Research Interests	Photograph
1	Dr. N.V. Ramana Rao, Professor of Civil Engineering & Director NITW	Ph.D	Vibrations, FEA, Structural Shape Optimisation of axisymmetric & prismatic shells & folded plates, Geopolymer Concrete, Composites, Ferrocement	
2	Dr.P.Rathish Kumar, Professor & HOD	Ph. D, Dr. Eng	High Performance Mortars/Concrete, Low Cost/Alternate building Materials, Self Compacting Concrete, Ferrocement, Fibrous Concretes, Recycled Aggregate Concrete, Earthquake Engineering, Cement Composites, Health Monitoring of Structures, Repair and Rehabilitation of buildings and bridges.	
3	Dr. K.V.Jayakumar, Professor (HAG, Emeritus)	Ph. D	Hydrology and Water Resources, Urban Water Management, Irrigation Engineering, Land and Water Management, Environmental Impact Assessment, Disaster Management, GIS Applications, Wetland Hydrology, Environmental Management, Environmental Flow	
4	Dr. N. V. Umamahesh, Professor (HAG)	Ph. D	Water Resources Systems, Hydrological Modelling, Stochastic Hydrology, Impact of Climate Change on Hydrology and Water Resources, Urban Floods, Flood Forecasting	

5	Dr. C.S.R.K. Prasad, Professor (HAG)	Ph. D	Transportation Engineering (Travel Demand Modelling, Urban & Regional Planning, Land Use Planning, Transit Oriented Development, Public Transport, Highway Network Design, Traffic Safety, Safety Audit, Traffic System Design, Transport Economics, Low Volume Roads, Project Management)	
6	Dr. C.B. Kameswara Rao, Professor	Ph. D	Engineering Structures, Ferrocement, Fiber reinforced concrete, Sustainable Concrete, Torsion of RC members, Rehabilitation and retrofitting of structures, Remedial Engineering, Ductility of High Strength Concrete, Progressive Collapse,	
7	Dr. P. Anandraj, Professor	Ph. D	Fuzzy Logic, Decision Making, Water Resources	
8	Dr. D.Ramaseshu, Professor	Ph. D	New Concrete making materials, Repair and Rehabilitation	
9	Dr. G.Rajesh kumar, Professor	Ph. D	High Strength Concrete, Prestressed Concrete, Bridges, Use of Sustainable Materials	

10	Dr. Deva Pratap, Professor	Ph. D	Engineering Geology, Remote Sensing Applications	
11	Dr. M. CHANDRA SEKHAR, Professor (HAG)	Ph. D	Water Quality Management, Air Pollution and Control, Wastewater Treatment, Solid Waste Management	
12	Dr. T. D. Gunneswara Rao, Professor	Ph. D	Fracture Mechanics of Concrete Structures Fiber Reinforced Concrete Sustainable Construction Materials	
13	(Late) Dr. E. Venkata Rathnam, Professor	Ph. D	Transients in Pipelines, Hydro-power Engineering, Groundwater Engineering, Urban Water Management, Design of Hydraulic Structures, Water Distribution Networks, Reservoir Sedimentation.	
14	Dr. V. Ramana Murty, Professor	Ph. D	Ground Improvement, Expansive Soils, Geosynthetics and Environmental Geotechniques	
15	Sri V.N.Kameswara Rao, Assoc.Professor	M.Tech	Fluid Mechanics and Hydraulic Machines; Hydrologic Systems Modelling; Transport Phenomena of Mass, Momentum, Energy for climate modelling; Groundwater Modelling	

16	Sri M. Sudhakar, Assoc.Professor	M.Tech	Steel fibre Reinforced Concrete	
17	Dr P.Hari Krishna, Assoc.Professor	Ph. D	Expansive Soils, Granular Anchor Piles, Soil-structure interaction	
18	Dr. M.Heeralal, Assoc.Professor	Ph. D	Ground improvement,EXpansive soil ,Recycled aggregate in pavements,geo Environmental,unsaturated soil.	
19	Dr K. Venkata Reddy, Assoc.Professor	Ph. D	Watershed modelling and management using numerical, soft computing and geospatial methods; Climate change impact studies; Applications of geospatial technologies in rural and urban environments.	
20	Dr P. Hari Prasad Reddy, Assoc.Professor	Ph. D	Soil-Pollutant Interaction, Adsorption studies, Contaminant Transport through Porous Media, Bioremediation	
21	Dr. Venkaiah Chowdary, Assoc.Professor	Ph. D	Characterization for asphalt binders and mixtures; asphalt pavement analysis, design and evaluation; assessment of roadway and railway traffic noise	









22	Dr. P. Venkateswara Rao, Assoc.Professor	Ph. D	Water and Wastewater treatment, Solid Waste management, Waste to energy technologies	
23	Dr. S. Venkateswara Rao, Assoc.Professor	Ph. D	Self Compacting Concrete, Fiber reinforced concrete, Durability of concrete, Self compacting mortars with Nano materials and multi component binder, use of recycled aggregates in concrete.	
24	Dr. Arif Ali Baig Moghal, Assoc.Professor	Ph. D	Geotechnical and Geoenvironmental Engineering, Unsaturated Soil Mechanics	
25	Dr. T.P. Tezeswi, Asst.Professor	Ph. D	multi-scale behavior of composite materials ,shock and high strain rate testing; structural dynamics; nonlinear finite element analysis; composite materials; vibration testing; photo elastic testing; Multi-hazard (blast, seismic and wind) vulnerability assessment of critical infrastructure.	
26	Dr. S. Shankar, Asst.Professor	Ph. D	Low Volume Roads-Design, Construction, Evaluation and Maintenance  Pavement Analysis and Design, Materials Characterization  Pavement Evaluation and Deterioration Modeling  Geosynthetics and Soil Stabilization  Sustainable/Marginal / Waste and innovative	






			materilas	
27	Dr. M. Shashi, Asst.Professor	Ph. D	Advanced Surveying, Photogrammetry, GNSS	
28	Dr. Ajey Kumar Patel, Asst.Professor	Ph. D	Computational Fluid Dynamics (CFD); Environmental Fluid Mechanics; Wastewater Engineering; Surface Aeration Systems	
29	Dr. D. Ravi Prasad, Asst.Professor	Ph. D	Structural health monitoring, Hybrid fiberreinforced engineered cementitious composites, sustainable construction materials.	
30	Dr. M.V.N. Sivakumar, Asst.Professor	Ph. D	Computational Mechanics;Fracture Mechanics Applications to Metal and Concrete Structures;Finite Element and Reliability Applications to Nuclear Reactor Components;Experimental Studies on Special Concretes;Rheology of concrete	
31	Dr. K.V.R. Ravi Shankar, Asst.Professor	Ph. D	Pedestrian behavioural analysis and modelling.  Crowd dynamic analysis and emergency evacuation planning.  Safety Analysis of vehicular interactions in mixed traffic conditions.  Non-lane based behaviour modelling and nanoscopic model development.  Optimal network design and	



			multi-modal analysis. Capacity analysis of highways in mixed traffic conditions.	
32	Dr. G. Kalyan Kumar, Asst.Professor	Ph. D	Seismic Hazard Analysis, Pile Foundations, Slope Stability Analysis	
33	Dr. K. Gopi Krishna, Asst.Professor	Ph. D	Wavelet finite element methods for structural dynamics, Multi-Hazard performance assessment of structures (Multiple earthquakes & secondary hazards), Reliability analysis of structures	
34	Dr. Arpan Mehar, Asst.Professor	Ph. D	Traffic flow behavior, Roadway capacity and level of service, Geometric design of highways, driver behaviour, Highway safety, traffic flow simulation	
35	Dr. P. Sridhar, Asst.Professor	Ph. D	Water/wastewater treatment, life cycle analysis, modelling of water/wastewater treatment, Solid waste management, bio-energy production from wastewater, wastewater sludge, and organic waste, Biodiesel, Bioplastic, Bio-flocculant	
36	Dr. G. V. Ramana, Asst.Professor	Ph. D	Rock Mechanics and Rock Engineering, Design and analysis of underground structures in or on rock-mass, Ground improvement techniques, Alkali Silica Reaction (ASR) Studies on Water Resources Structures, Strength and Durability Studies of Multi	

			Blended Concretes.	
37	Dr. S. Anitha Priyadharshani, Asst.Professor	Ph. D	FRP Composites, stiffened plates and Finite element analysis	
38	Dr. B. Kavitha, Asst.Professor	Ph. D	Engineering Seismology; Earthquake data analysis; Simulation of ground motions; Probabilistic Seismic Hazard Assessment; Earthquake Forecasting	
39	Dr. V. Aneetha, Asst.Professor	Ph. D	BIM and nD planning, Lean construction, Construction Quality and Safety Management, Project planning and control, Value Engineering	
40	Dr. C. Sumanth, Asst.Professor	Ph. D	Air pollution, Indoor Air Pollution, Sustainable Development, Water and waste water, Solid waste management	
41	Dr. Umesh B., Asst.Professor	Ph. D	Numerical Methods in Civil Engineering, Classical and non-Classical Continuum theories and Damage and Fracture Mechanic	
42	Dr. Shashi Ram, Asst.Professor	Ph. D	Sustainable Building Materials, Energy Efficient Materials, Green Buildings, Solid Waste Management	

43	Dr. Sudheer K. Yamsani, Asst.Professor	Ph. D	Environmental Geotechnics, Reinforced soil systems	
44	Dr. Litan Kumar Ray, Asst.Professor	Ph. D	Stochastic hydrology, Flood & drought estimation, Real-time flood forecasting modelling, Hydrologic Modelling, climate change and climate variability study	
45	Dr. Vema Vamsi Krishna, Asst.Professor	Ph. D	Hydrologic Modelling, Watershed Management, Parameterization of Watershed Models, Agricultural Water Management, Optimal Allocation of Resources, Decision Making Under Uncertainty, and Application of Soft Computing Tools for Water Resources Problems.	
46	Dr. Vishnu R., Asst.Professor	Ph. D	Pavement Materials, Pavement evaluation and Design	
47	Dr. Sanjit Biswas, Asst.Professor	Ph. D	Soil Dynamics, Machine Foundations, Shallow and Deep Foundations, Field and Laboratory Testing, Finite Element Analysis, Continuum Approach Modelling	

48	Dr. R. Ramesh Nayaka, Asst.Professor	Ph. D	Building Information Modelling (BIM) in Construction Projects, Modern Construction Techniques for Affordable Housings and Sustainable Construction Materials.	
49	Dr. Manish Pandey, Asst.Professor	Ph. D	Fluvial Hydraulics, River Training Works, Sediment Transport	
50	Dr. Raghuram Kadali, Asst.Professor	Ph. D	Pedestrian Cross Flow Modelling, Non-Motorized Safety, Traffic Safety, Driver Behaviour, Traffic flow modeling; Transportation Environment; Travel behavior, Sustainable Transportation; Freight Transportation	
51	Dr. P. Ravi Prakash, Asst.Professor	Ph. D	Computational Mechanics, Structural Fire Engineering, Artificial Intelligence in Structural Engineering	
52	Dr. Manali Pal, Asst.Professor	Ph. D	Hydroclimatology, Remote Sensing, Stochastic Modelling, Machine Learning, Soil Moisture	

## Journal Publications

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**Rathish Kumar. P** (2020)."Cost-effectiveload measurement system for health monitoring using long-period grating as an edge filter" Optical Fiber Technology, Elsevier DOI: 10.1016/j.yofte.2020.102328.

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**Rathish Kumar. P** (2020). "Image based deterioration assessment of concrete", Materials Today, Elsevier, 10.1016/j.matpr.2020.03.716.

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**Arif Ali Baig Moghal**, Mohammed Abdul Lateef, Syed Abu Sayeed Mohammed, Munir Ahmad, Adel R.A. Usman and Abdullah Almajed, Heavy Metal Immobilization Studies and Enhancement in Geotechnical Properties of Cohesive Soils by EICP Technique, *Applied Sciences*. Vol. 10, No. 21, Article No. 7568.

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- John, C. K., Pu, J. H., **Pandey, M.**, & Moruzzi, R., Impacts of sedimentation on rainwater quality: case study at Ikorodu of Lagos, Nigeria. *Water Supply (IWA)*.
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### Conference publications

Das, Jew; **Umamahesh, Nanduri**; Jha, Srinidhi; Analysing the Return Period and Risk under the Influence of Physical Covariates on Hydrological Extreme, EGU General Assembly April 2021.

Lav Kumar Gupta, **P. Anand Raj and Manish Pandey**, The Effects of Emergent Vegetation in Hydrodynamic Free-Surface Flow: A Research Review, International E-conference on Water Source Sustainability (ICWSS21), 18-20 June 2021, IIT Roorkee, India.

G.S. Kumar, **V. Ramana Murty**, Lambutre Mahesh and **J. Rakesh Pillai**, Influence of Soil-Cement Columns on Load-Deformation Behaviour of Soft Clay, Problematic Soils and Geoenvironmental Concerns, Lecture Notes in Civil Engg., Vol.88, Springer, Singapore.

Khatri, K., Ansari, M.T., **Vishnu, R.**, and **Chowdary, V.**, Evaluation of Fourier transform infrared spectroscopy indices to explain the rutting susceptibility of rejuvenated recycled blends. 13th International Conference on Transportation Planning and Implementation Methodologies for Developing Countries, Mumbai, India, December 10 to 11, 2020.

Kumar K, **Shashi M, and Venkata Reddy K**, RCC Structural deformation and damage quantification using Unmanned Aerial Vehicle Image Correlation (UAVIC), Unmanned Aerial Systems and Geomatics - 2021, IIT Roorkee, 02-04 April, 2022.

Ayyappa Reddy A, **Shashi M**, Algal Bloom Detection Using UAV Imagery: A Case Study on Waddepally Lake, Warangal, Unmanned Aerial Systems and Geomatics - 2021, IIT Roorkee, 02-04 April, 2021.

C. Murali Krishna, **Tezeswi P. Tadepalli**, "Decision support tool for Blast Mitigation",

Virtual Conference on Disaster Risk Reduction VCDRR 2021, Springer.

Veldhandi Saisanjay, **Umesh Basappa**, Analytical Solution for Nonlinear Static Bending Analysis of Functionally Graded Nano beam. Virtual International Conference on Sustainable Building Materials and Construction (ICSBMC-2021), 4 – 6th February 2021, NIT Surat, India.

**Manish Pandey**, Scour around submerged spur dikes: an experimental study, Hydro 2021, NIT Surat, India.

**Kadali, B. R.**, Gadiraju, S.S.S.R., and Gaddam, H.K. Analysis of Travellers Risk Perceptions about Public Transit Systems during COVID-19 Pandemic-TRAM-22-01831, 101th TRB Annual Meeting

Praveen, M., and **Kadali, B. R.** Study of Factors to Be Motivated to Use Ride Hail Services in Mixed Traffic Conditions. (TRBAM-22-01193), 101th TRB Annual Meeting.

Palagiri, H., **Pal, M.**, Maity, R. Drought Monitoring using Satellite Soil Moisture Data over Godavari Basin, India, Paper ID-72, 26th International Conference on Hydraulics, Water Resources and Coastal Engineering (HYDRO 2021)

**Pal, M.**, Rajib Maity, J.V. Ratnam, M. Nonaka, and S. K. Behera, Evaluation of Machine Learning algorithms for long-lead forecasting of ENSO Modoki Index, AGU Fall Meeting, Abstract ID# 885820, December 13-17, **2018**, New Orleans LA, USA

### Funded Research Projects (Total : Rs. 4.84 Crores)

PI: **Dr. K Venkata Reddy**, Co-PI: **Prof. N V Umamahesh, Prof. Deva Pratap and Dr. M. Shashi**, IWMM- BIS "Integrated Water Management Model for BIS Countries Under Climate Change Scenarios, BRICS-DST, Duration-3 years, Rs. 39 Lakhs.

PI: **Prof. N V Umamahesh**, Co-PI: **Dr. K Venkata Reddy**, Short and Medium Range Flood Forecasting System for Godavari River Basin using Ensemble Weather Forecast, Monsoon Mission-II Project, Indian Institute of Tropical Meteorology, Pune, MoES, IITM/MM-

II/NIT/2018/IND-6/Sanction Order dated 27.7.2018, Duration-3 years, Rs. 53.95 Lakhs.

PI: **Dr. K Venkata Reddy**, Co-PI: **Prof. N V Umamahesh, Dr. M. Shashi, Prof. Deva Pratap**, A Decision Support System for Climate Change Adaptation of Chain Tank Systems of Semi-Arid Region, DST, Duration-3 years, Rs. 35.6 Lakhs.

PI: **Dr. S Venkateswara Rao**, Department of Civil Engineering, Evaluating the performance of Pavement Quality Geopolymer Concrete using Digital Image Correlation Technique, DST-SERB, Rs. 40.0 Lakhs.

PI: **Dr. Ramesh Naik**, Department of Civil Engineering, Innovative Development of White Clay and Graphene Composite Ventilation Wall Cladding Tiles to Curtail Heat Ingress, SERB/EEQ/2020/000499/Sanction Order Dated Jan 18, 2021, Rs. 45 Lakhs.

PI: **Dr. Raghuram Kadali** and Dr Saladi S.V. Subbarao, Evaluation of Transit Oriented Development (TOD) and Its Association with Travel Behaviour and Gentrification Using Big Data Analytics, GITA/DST/TWN/P-91/2021 Sanction Order Dated 24th May, 2021, Rs.46.24 Lakhs.

Nodal PIs: **Dr B Raghuram Kadali, Prof CSRK Prasad** and PI: Ch Ravi Shekar, CRRI, Development of Trip Generation Manual for Indian Cities, Ref No. CSIR/CRRI/NITW/-15-12-2021, Duration-2 years, Rs. 8.14 Lakhs.

PI: **Dr B Raghuram Kadali**, A study of pedestrian exposure to traffic emissions and consequences to their travel behavior, SRG/2021/002127, SERB-SRG, Duration-2 years, Rs. 28.26 Lakhs.

PI: **Dr. T. P. Tezeswi**, Co-PI: **Prof. C.B.Kameswara Rao**, Department of Civil Engineering, Non-destructive damage detection and damage quantification in composite (HAP) panels, SERB IMPRINT-2, Duration-3 years, Rs. 1.33 Crores.

PI: **Dr. S. Shankar**, Department of Civil Engineering, Performance Evaluation of

Emulsified Asphalt and Cement Treated bases, SERB-DST, Duration-3 years, Rs. 30.48 Lakhs.

PI: **Dr. P. Venkateswara Rao**, Co PI: Dr. M. Srikanth, BITS Goa, Dr. Krishna Kumar, CSIR NIIST, Kerala, Dr. P. Raman, TERI, Delhi, Co-Digestion of STP secondary sludge with organic wastes in urban/peri-urban areas; process optimization scale up and field demonstration, DST, Duration-6 months, Rs. 5 Lakhs.

PI: **Dr. P. Hari Krishna** Co PIs: **Prof. TD Gunneswara Rao, Dr. Venkaiah Chowdary**, Exploring ecofriendly civil engineering techniques for disposal of plastic waste, NHAI, Duration-3 years, Rs. 19.27 Lakhs

### **Consultancy work details (Total : Rs. 1.34 Crores)**

#### **Major Works**

**Prof. C.B.Kameswara Rao & Prof. D. Ramaseshu**, Proof Checking of Structural Designs for Construction of Multilevel Car Parking (MLCP) & Commercial Complex, Visakhapatnam Rs. 11.328 Lakhs.

**Dr. S. Venkateswara Rao, Dr. D. Ravi Prasad & Dr. M.V.N.Siva Kumar**, Kaleswaram project-Construction of Shanrampet Branch Canal System (on Ramayampet Canal) including Distributary network for irrigating an ayacut of 19452 Acres under Konda Pochamma Sagar, Siddipet District, Rs.9.44 Lakhs.

**Prof. G. Rajesh Kumar**, Widening and Strengthening /Reconstruction of existing pavement to Four lane with paved shoulders from Km 266.348 to Km 283.000 of Mahabubnagar-Jadcherla section of NH-167 on EPC mode in the state of Telangana, Rs. 7.08 Lakhs.

**Prof. G. Rajesh Kumar**, Rehabilitation and up-gradation of Machilipatnam to Avanigadda section from Km 84/550 to Km 124/200 of NH-214A (New NH-216) to two lane with paved shoulder in the state of Andhra Pradesh under NHDP -IV Through EPC (Engineering, procurement & construction), Rs. 5.31 Lakhs.

**Dr. K.Gopi Krishna, Prof. T.D.Gunneswara Rao, Dr.M.V.N.Sivakumar, Prof.N.V.Ramana Rao**, Major Bridge at km 412+130 from

Ghaziapur to Bhalla in the state of Uttar Pradesh, Rs. 3.54 Lakhs.

**Prof. D. Ramaseshu**, 25 MLD STP Project at Morena, Madhya Pradesh, Rs. 3.068 Lakhs.

**Prof. T.D.Gunneswara Rao & Sri. M. Sudhakar**, Soundness of the structures- Inspection of 30000 Gallons ELSR (2No.)- Head Office Building -First floor slab (old) 750 Sq.m, NB Type Quarters (slab area 150 sq.m) 1 No. Rs. 2.9736 Lakhs.

**Dr.T.P.Tezeswi, Dr.M.V.N.Sivakumar & Dr.Anitha Priyadarshini**, Sewage Treatment Plant (Plant Capacity: 5 MLD) At Pachkalva Gangamma Gudi, Thirumala, Rs. 2.832 Lakhs.

**Prof. C.B.Kameswara Rao & Dr.T.P.Tezeswi**, Proof checking of structural designs for provision of Hanger with Annexe and Warehouse for Induction of HLH Unit at AF STN DINJAN, Rs.2.36 Lakhs.

**Prof. T.D.Gunneswara Rao & Dr.T.P.Tezeswi**, Design of Gantry at OCP-I, CHP, Ramagundam Area-III, Rs. 2.36 Lakhs

**Prof. T.D.Gunneswara Rao & Dr.M.V.N.Sivakumar**, Construction of Interpretation Center and Entrance Plaza at Qutub Shahi Heritage Park, Hyderabad, Rs. 2.065 Lakhs

**Prof. T.D.Gunneswara Rao & Sri. M. Sudhakar**, Construction of New Integrated Terminal Building and Associated Works including maintenance, Operation and AICMC at Vijayawada Airport, Rs. 1.888 Lakhs.

**Prof. G. Rajesh Kumar & Prof. P. Ratish Kumar**, Proof checking of Structural Drawings for the Yanam Hospital project, Rs. 1.77 Lakhs.

**Prof. D. Ramaseshu & Prof. C.B.Kameswara Rao**, Vetting of Structural Designs- PEB Steel Structure for Concor Project (Container Terminal Railway), Rs. 1.416 Lakhs.

**Dr. D. Ravi Prasad & Dr. P. Ravi Prakash**, Concrete mix design for manufacturing of pave blocks and chequered tiles, Rs.1.416 Lakhs.

**Prof. D. Ramaseshu**, Vetting of Structural designs-Int Students Hostel (ISH), University of Hyderabad, Rs.1.416 Lakhs.

**Prof. P. Ratish Kumar & Dr. S. Venkateswara Rao**, Proof checking of design, Premier Solar Systems (P) Ltd, Rs. 1.18 Lakhs.

**Dr.T.P.Tezeswi, & Dr. Umesh Basappa**, Residential Acc 40 Sailors in G+10 Storey, Chanakhtbag, New Delhi, Rs. 1.06200 Lakhs.

**Prof. C.B.Kameswara Rao**, Proof checking of structural designs for provision of deficient in living accommodation for sailors at INS Circars, Vishakhapatnam, Rs.0.944 Lakhs

**Dr.S.Venkateswara Rao & Dr. M.V.N. Sivakumar**, Widening and Diversion of BT approach road to KTK OC-II and laying of BT approach road to Base Workshop, stores, and project office complex including cross drainage works at KTK OC-II Project, Bhupalpalli, Rs.0.472 Lakhs

**Dr. Venkaiah Chowdary**, Bituminous mix design, pavement evaluation, Tests on pavement materials, Rs.0.89 Lakhs.

**Dr. V. Ramana Murty**, Technical report for new substation site leveling with Flyash and laying cable and drainage lines within the flyash fill, Rs. 0.45 Lakhs.

**Dr. V. Ramana Murty**, Technical report for 2-lane bridge across Gorrepeta vagu, Manuguru, SCC Ltd., Manuguru, Rs.0.45 Lakhs.

**Dr. V. Ramana Murty**, Technical report for Uddaman water supply project, Srikakulam District. Rs.0.47 Lakhs.

**Dr. V. Ramana Murty**, Technical Report on Pile capacity calculation for WP structures, Director General Navel Project, Visakhapatnam., Rs. 1.53 Lakhs.

**Dr. V. Ramana Murty**, Technical report on diversion of Vattivagu & GI Bunker construction at Goleti, SCC Ltd. Bellampalli, Rs.0.49 Lakhs.

**Prof. C.S.R.K. Prasad, Dr. Venkaiah Chowdary, Dr. K.V.R. Ravi Shankar, Dr. S. Shankar, Dr. Arpan Mehar, Dr. R. Vishnu, and Dr. K.B. Raghuram**, Nadikudi – Sri Kalahasti New Broad Gauge Line Project –

Testing of Blanketing Materials as per RDSO - GE0014 Specifications from Ch. 74200 m to Ch. 98000 m in Reach - IV between Ext Gundalakamma and Pro Darsi Stations - Testing of the Blanketing Material, sponsored by South Central Railway, Guntur, Andhra Pradesh, Rs 0.295 Lakhs, March 2021.

**Prof. C.S.R.K. Prasad, Dr. Venkaiah Chowdary, Dr. K.V.R. Ravi Shankar, Dr. S. Shankar, Dr. Arpan Mehar, Dr. R. Vishnu, and Dr. K.B. Raghuram**, Conversion of Track from MG to BG between Khandawa to Amalakhurd Stations - Execution of Earthwork in Embankment/Cutting, Blanketing to GE-14 Specifications of RDSO between Khandawa and Jirwan Stations in Maharashtra state (Reach-1) - Designing the Blanketing Material, sponsored by South Central Railway, Akola, Maharashtra, Rs 0.295 Lakhs, March 2021.

**Prof. C.S.R.K. Prasad, Dr. Venkaiah Chowdary, Dr. K.V.R. Ravi Shankar, Dr. S. Shankar, Dr. Arpan Mehar, Dr. R. Vishnu, and Dr. K.B. Raghuram**, Railway Formation for the Bew BG Third Line between Manadamarrri and Sirpur Khagaznagar Stations (Reach-IV) in Telangana State to Carry Heavy Axle Load - Designing the Blanketing Material to GE-0014 Specifications of RDSO sponsored by South Central Railway, Kazipet, Telangana, Rs 0.295 Lakhs, March 2021.

### Patents (Filed, Published, Granted and Licensed)

#### ) Filed

**C.B. Kameswara Rao, D. RamaSeshu, T.D.Gunneswara Rao** and Ch.Manjula, Prefabricated Mesh as Longitudinal Core Reinforcement in RC Members, No. 202041003566 A (Filed).

**C.B. Kameswara Rao, D. RamaSeshu, D.Karthik and A.Saraswathi**, A Novel Means of Anchorage for Reinforcing Bars in Reinforced Concrete Members, No. 202041005177 A (Filed).

**R. Ramesh Nayaka**, U. Johnson Alengaram, MohdZamin Jumaat and Sumiani Yusoff, A process of Producing A Lightweight Eco-Friendly Hollow Masonry Block Devices, No. PI2020002945 (Filed).

Rahul V. Ralegaonkar and **Shashi Ram**, Application of co-fired blended ash for the development of bricks, No. 201721017816 (Filed).

Dr. A. Suchith Reddy and **Prof P. Rathish Kumar**, A Method And System For Assessing Sustainability of Civil Infrastructures. Application No. 202141054686 (Filed, 2021)

### Books and Book Chapters

**Prof P.Rathish Kumar**, Department of Civil Engineering has published a book on "Advances in Sustainable Construction Materials" by Springer Publications co-authored by Prof Sandip Chaudhary of IIT Indore and Dr S.Bhaskar Scientist SERC Chennai.

**Ratish Kumar Pancharathi**, M.L.V. Prasad and K.L. Radhika (2021), "Stress Block Parameters of confined Fibrous Recycled Self Compacting Concrete", Composites Science and Technology. Emerging Trends of Advanced Composite Materials in Structural Applications, 978-981-16-1687-7, 498865\_1En, (Chapter 8), Springer (Nature) Publishers

Syed Abu Sayeed Mohammed and **Arif Ali Baig Moghal** (2021). Nanomaterials-Based Solidification/Stabilization of metal-contaminated soils. Editor(s): Abdellatif Amrane, Dinesh Mohan, Tuan Anh Nguyen, Aymen Assadi; Nanomaterials for Soil Remediation. Amsterdam, Netherlands, pp. 385-407. ISBN:978-0-12-822891-3. <https://doi.org/10.1016/B978-0-12-822891-3.00018-9> (BOOK CHAPTER - SCOPUS Indexed)

Nirbhay Narayan Singh, Y Sudheer kumar, **Hari Krishna P** (2021): Desiccation Induced Cracking Characteristics of Locally Available Soils in Warangal, Lecture Notes in Civil Engineering, Springer Singapore



**Padavala Hari Krishna** and Adla Nandini (2021): Influence of Sand on the Behavior of Buffer Material Used for the Nuclear Waste Disposal, Advances in Sustainable Construction and Resources Management, Lecture Notes in Civil Engineering, Springer Singapore

### Conferences, workshops, FDPs, Webinars organized

**Prof. N.V.Ramana Rao**, AICTE Sponsored Two Week online Faculty Development Program (FDP) on Advanced Computing in Civil Engineering (ACCE) (16-Nov-2020 to 28-Nov-2020) Series-1 Advanced Computational tools in Structural Modelling and Analysis & Transportation and Traffic systems.

**Prof P. Rathish Kumar**- Lecture session on Durability and Sustainability-Confluence and Juxtaposition at the Five Day Online FDP on Recent Trends and Research Scope in Civil Engineering during 6-10, July 2020

**Prof P. Rathish Kumar**- Lecture on Condition Assessment and Rehabilitation of Concrete Structures in the One Week Online FDP on Advances in Concrete Science and Technology for Sustainability (ACSTS) during 13-18 July 2020

**Prof P. Rathish Kumar**- Keynote Lecture on Performance and Assessment of Sustainable Concrete Making Materials at the Six Day Online FDP on Modern Materials & Structural Systems for Resilient and Sustainable Infrastructure, 21-26 September 2020 at T.K.M. College of Engineering, Kollam, Kerala

**Prof P. Rathish Kumar**-Keynote Lecture on Sustainable Concrete Making Materials at the Five Day Online FDP on Sustainable Materials for Smart Cities: Challenges and Recent Trends 21-25 September 2020 at S.R.University, Warangal.

**Prof. P.Ratish Kumar**, AICTE Sponsored Two Week online Faculty Development Program (FDP) on Advanced Computing in Civil Engineering (ACCE) (16-Nov-2020 to 28-Nov-2020) Series-1 Advanced Computational tools in Structural Modelling and Analysis & Transportation and Traffic systems.

**Prof. N V Umamahesh.**, Invited keynote on "Urban Flood Modelling", AICTE sponsored FDP on Advanced Computing in Civil Engineering organized by VNR Vignana Jyothi Institute of Engineering and Technology, 23<sup>rd</sup> Feb 2021.

**Prof. N V Umamahesh.**, Invited lecture on "Modelling Impact of Climate Change on Water Resources", FDP on Recent Trends and Advances of Thrust Areas of Research in Civil Engineering organized by Reva University, Bangalore, 2<sup>nd</sup> March 2021.

**Prof. N V Umamahesh.**, Invited talk - "Modelling Impacts of Climate Change", FDP on "Research Prospects in Water Resources and Environmental Engineering, 15<sup>th</sup> September 2020.

**Prof. N V Umamahesh**, invited lecture on "Simulation Modelling" in AICTE Training and Learning (ATAL) FDP on "Engineering Optimization Techniques and its Applications (ENOTAA-2021)" held during 14-18 June, 2021 at College of Engineering, Aurangabad Prof. N V Umamahesh, invited talk on "Sustainable Urban Water Management under Changing Climate", Civil Tech Talk organized by Telangana Academy of Skill and Knowledge (TASK) on 27 April, 2021

**Prof. N V Umamahesh**, invited talk on "Modelling Impact of Climate Change on Water Resources", FDP on Recent Trends and Advances of Thrust Areas of Research in Civil Engineering organized by Reva University, Bangalore on 2 March, 2021

**Prof. N V Umamahesh**, invited talk on "Urban Flood Modelling", AICTE sponsored FDP on Advanced Computing in Civil Engineering organized by VNR Vignana Jyothi Institute of Engineering and Technology, 23.02.2021

**Prof. C.S.R.K.Prasad**, AICTE Sponsored Two Week online Faculty Development Program (FDP) on Advanced Computing in Civil Engineering (ACCE) (16-Nov-2020 to 28-Nov-2020) Series-1 Advanced Computational tools in Structural Modelling and Analysis & Transportation and Traffic systems.



**Prof. C.S.R.K.Prasad**, AICTE Sponsored Two Week online Faculty Development Program (FDP) on Advanced Computing in Civil Engineering (ACCE) (16-Nov-2020 to 28-Nov-2020) Series-1 Advanced Computational tools in Structural Modelling and Analysis & Transportation and Traffic systems.

**Prof. CSRK Prasad, Dr. Venkaiah Chowdhary, Dr.S.Shankar**, Transportation Engineering Industry Expert Talks (TEIET-2020), sponsored by TEQIP-III

**Prof. CSRK Prasad, Dr.Raghuram Kadali**, A Five Day FDP on Road Safety Issues and Challenges, sponsored by TEQIP-III, December 07-11, 2020.

**Prof. G. Rajesh Kumar, Dr. S. Shankar, and Prof. C.S.R.K. Prasad**. A Three-Day Executive Development Programme on "Planning, Design, and Construction of Culverts and Bridges" Organized for Panchyat Raj Engineers, Sponsored by National Rural Infrastructure Development Agency, Ministry of Rural Development, during 11/03/2021-13/03/2021.

**Dr. K.B. Raghuram, Dr. Arpan Mehar, and Prof. C.S.R.K. Prasad**. A Three-Day Executive Development Programme on "Road Safety and Road Safety Audit for Rural Roads", Organized for Panchyat Raj Engineers, Sponsored by National Rural Infrastructure Development Agency, Ministry of Rural Development, during 01/03/2021-03/03/2021.

**Prof. C.S.R.K. Prasad and Dr. B Raghuram Kadali**. TEQIP-III- One week Online FDP on "Road Safety Issues and Challenges", Organized for Faculty, Students and Field engineers, Sponsored by TEQIP-III, during 07/12/2021-11/12/2021.

**Dr. S. Shankar, Dr. Venkaiah Chowdhary, and Prof. C.S.R.K. Prasad**. A Three-Day Executive Development Programme on "New Technology Initiatives in Rural Roads and Use of Marginal Materials", Organized for Panchyat Raj Engineers, Sponsored by National Rural

Infrastructure Development Agency, Ministry of Rural Development, during 18/02/2021-20/02/2021.

**Dr. Venkaiah Chowdhary, Dr. S. Shankar, and Prof. C.S.R.K. Prasad**. A Three-Day Executive Development Programme on "Design of Flexible and Rigid Pavements for Rural Roads" Organized for Panchyat Raj Engineers, Sponsored by National Rural Infrastructure Development Agency, Ministry of Rural Development, during 22/02/2021-24/02/2021.

**Dr. Venkaiah Chowdhary, Dr. R. Vishnu, and Prof. C.S.R.K. Prasad**. A Three-Day Executive Development Programme on "Quality Control, Material Testing Procedures and Laboratory Practices" Organized for Panchyat Raj Engineers, Sponsored by National Rural Infrastructure Development Agency, Ministry of Rural Development, during 25/02/2021-27/02/2021.

**Dr. Deva Pratap**, Invited Lecture on Remote Sensing and GIS for Groundwater Prospects in AICTE - ISTE sponsored one week online FDP on Advanced Surveying and Instruments, Department of Civil Engineering, AISSMS Polytechnic, Pune on 01.03.2021.

**Dr. Deva Pratap.**, Invited talk- "AICTE - ISTE sponsored one week online FDP on Advanced Surveying and Instruments", Department of Civil Engineering, AISSMS Polytechnic, Pune, 1<sup>st</sup> March 2021.

**Dr. V. Ramana Murty**, Invited lecture on "Foundation Techniques in Expansive Soils" in online FDP on Shallow and Deep Foundations, Department of Civil Engineering, AU, Visakhapatnam on 5-2-2021.

**Prof. M Chandra Sekhar**. AICTE - ATAL One week Training Program "COMPOSTING TECHNOLOGIES FOR MUNICIPAL SOLID WASTE MANAGEMENT", Organized for Faculty, Students and Field engineers, Sponsored by AICTE, during 04/01/2021-08/01/2021.

**Dr. V. Ramana Murty.,** Invited talk- "Foundation Techniques in Expansive Soils", FDP on Shallow and Deep Foundations, AU, Visakhapatnam, 5<sup>th</sup> May 2021.

**Dr. Venkaiah Chowdary,** 5 Day FDP - "Emerging trends in Infrastructure Projects", July 20-24,2021.

**Dr.Sridhar P, Dr.P.Venkateswara Rao, Dr.C.Sumanth, Dr.Venkaiah Chowdary,** 6 Day FDP-"Effective teaching & Learning Practices for Management of Solid Waste", January 18-23,2021.

**Dr. Arif Ali Baig Moghal and Dr. Sudheer Kumar Yamsani.** A Five Day Online Workshop on "Sustainable Engineered Waste Barrier Systems (SEWBS)" Organized for Students, faculty, researchers, Sponsored by CED, during 08/03/2021-12/03/2021.

**Dr.T.P.Tezeswi,** AICTE Sponsored Two Week online Faculty Development Program (FDP) on Advanced Computing in Civil Engineering (ACCE) (16-Nov-2020 to 28-Nov-2020) Series-1 Advanced Computational tools in Structural Modelling and Analysis & Transportation and Traffic systems.

**Dr.T.P.Tezeswi,** invited talk- " Modelling of Polymer Composites and Cementitious materials", 2 week AICTE Sponsored FDP on "Advanced Computing in Civil Engineering", Department of Civil Engineering, VNR Vignana Jyothi Institute of Engineering & Technology, 16th Nov 2020 – 28th Nov 2020.

**Dr.T.P.Tezeswi,** AICTE Sponsored Two Week online Faculty Development Program (FDP) on Advanced Computing in Civil Engineering (ACCE) (16-Nov-2020 to 28-Nov-2020) Series-1 Advanced Computational tools in Structural Modelling and Analysis & Transportation and Traffic systems.

**K.V.R. Ravi Shankar,** 2 Day FDP- "Symposium for safer roads/ Discussion on Plan for rectification of black spots, National Road Safety month 2021, Online, Ministry of Road Transport and Highways, Government of India, February 03-04, 2021.

**Dr. K.V.R. Ravi Shankar.,** Invited talk - "Road safety in link design, alignment, roadway geometry and NMT road safety audit / Safety measures for NMT", Resource Person for Five Day Online FDP on Road Safety Issues and Challenges, Organized by NIT Warangal, 7<sup>th</sup> - 11<sup>th</sup> Dec 2020.

**Dr. G Kalyan Kumar.** A Five Day Online Workshop on "Computational Geomechanics – Theory and Applications to Earthquake Engineering", Organized for Students, faculty, researchers , Sponsored by CCE, during 24/08/2020-28/08/2020.

**Dr. G Kalyan Kumar, Dr. Sanjit Biswas.** A Five Day Online Workshop on "Finite Element Analysis of Static and Dynamic Soil-structure Interaction of Geosystems" Organized for Students, faculty, researchers , Sponsored by TEQIP-III, during 04/01/2021-08/01/2021.

**Dr. P. Sridhar,** Sustainable building materials, FDP program at KITS Warangal, 27-31 August 2018.

**Dr. P. Sridhar,** Energy economics of the AD process & design parameters/criteria for anaerobic digesters and commercial models for biogas production, FDP program at NIT Warangal, 27-31 August 2018.

**Dr. R Ramesh Nayaka.,** Invited talk - "Sustainable Construction Materials for Affordable Housing", Online FDP on "Novel materials and Technologies for sustainable construction" at GCE Kozhikode, Kerala, 26<sup>th</sup> March 2021.

**Dr. R Ramesh Nayaka.,** Invited talk- "Innovative building blocks for masonry construction", FDP on "Innovations in low cost construction technologies" Rajadhani Institute of Science and Technology, Palakkad, 25<sup>th</sup> feb 2021.

**Dr. Manish Pandey.** A Three-Day Online Training Program on "River Dynamics, Flood and Sediment Hazards Assessments in Indian Rivers", Organized for Faculty, Scholars, young researchers, Engineers and young professionals, Sponsored by National Institute

of Disaster Management (NIDM), New Delhi, during 23/08/2021-25/08/2021.

**B Raghuram Kadali**, SPARC- A Two day International Workshop, Concept, Theory and Practices of Road Pricing Schemes: LEssons LEarned and Way Forward" BITS-Pilani Hyderabad, 03-06-2020 to 03-07-2020.

**B Raghuram Kadali**, STTP, Operations Research for Business and Engineering: Concepts, Applications and Methods, Online, IIT Delhi, 14-12-2020 to 18-12-2020.

**B Raghuram Kadali**, 3-day Faculty Workshop on Outcome Based Education, Online-NITW, 07-07-2021 to 09-07-2021.

**B Raghuram Kadali**, 7-Day FDP on Universal Human Values, Online-NITW, 12-07-2021 to 20-07-2021.

**B Raghuram Kadali**, 5-Day FDP on Highway Development and Maintenance Investment Decision, Online, IAHE, New Delhi. 03-08-2021 to 08-08-2021.

**B Raghuram Kadali**, 5-Day STTP, Applications of MCDM Methods in Logistics and Transportation, NITC, 01-12-2021 to 05-12-2021.

**Dr. B. Raghuram K**, Role of Consumer Behaviour on Travel Behaviour Analysis, A 3-day on-line FDP on Advances in Civil Engineering, Department of Civil Engineering, Swarnandhra College of Engineering and Technology, 21-23 May 2020.

**Dr. P. Ravi Prakash**, Fire Safety in Structures, FDP, KPRIT Coimbatore, 15 May 2020.

**Dr. P. Hari Krishna, Prof. V. Ramana Murty and Dr. Arif Ali Baig Moghal**. A Six Day Online Faculty Development Program on "Effective Teaching and learning of Geotechnics for Infrastructural development (ETLGID)" Organized for Students, faculty, researchers, Sponsored by Teaching Learning Center-NIT Warangal, during 25/10/2021-30/10/2021.

## Guest Talks/webinars delivered

**Prof. N.V.Ramana Rao**, National Webinar on "Online Education – the Opportunities and Challenges", Dr.(Smt.) Tamilsai Soundrarajan, Hon'ble Governor of Telangana as Chief Guest, Prof.N.V. Ramana Rao, Director was the Guest of Honour for Webinar held at NIT Warangal on 25th August 2020.

**Prof. N.V.Ramana Rao**, National Webinar on "National Education Policy-2020 (NEPCON-2020)" organized by KIIT Deemed to be University, Bhubaneswar on 29th & 30th August, 2020 over Zoom Virtual Platform. Prof. N.V. Ramana Rao, Director, NIT Warangal act as a Panel Speaker for the Webinar.

**Prof. N.V.Ramana Rao**, A webinar on "Challenges for Chemical Engineers in Operating Heavy Water Plants" organised by the Department of Chemical Engineering on 1st September 2020. Prof. N.V. Ramana Rao, Director, NIT Warangal as Chief Guest for the webinar.

**Prof. N.V.Ramana Rao**, National Webinar on "Strategies for Implementation of National Education Policy-2020 for the Technical Education" organised by NIT Warangal on 2nd September 2020. Prof. N.V. Ramana Rao, Director & Chief Patron and Eminent Speaker for the webinar.

**Prof. N.V.Ramana Rao**, Elsevier in collaboration with Central Library, NIT Warangal organised a Webinar on "Research Simplified with Elsevier: Plan Effectively, Read Quality, Publish Quality" held on 8th September 2020. Prof. N.V. Ramana Rao, Director, NIT Warangal as Chief Guest for the webinar.

**Prof. N.V.Ramana Rao**, International continuous Professional Development (CPD) webinar series on "Sustainable Practices and Advancements in Civil Engineering (SPACE 2020)", organised by Chaitanya Bharathi Institute of Technology, Hyderabad in association with Contractors Development Institute (CDI-NAC) during 9-9-2020 to 13-9-2020.

**Prof. N.V.Ramana Rao**, Webinar series organised by TASK Telangana 'Civil Tech Talks' Prof. N.V. Ramana Rao, Director, NIT Warangal as Chief Guest and delivered Inaugural address speaker on 15th September 2020.

**Prof. N.V.Ramana Rao**, A Webinar organised by FICCI Telangana State Council in Association with Telangana State for Higher Education on 'National Education Policy 2020' A Game Changer for Telangana, on 19th September, 2020, as Speaker during the Valedictory Session.

**Prof. P. Rathish Kumar**, Keynote Address on "Sustainable Materials and Life Cycle Assessment of Blended Cements in the Indian Context", Research Conclave 2021, Organized by the Research and Innovation Council of REVA University 16th -17th December 2021.

**Prof. P. Rathish Kumar**, Invited talk, "Material Characterisation and Development of Sustainable Repair Mortars for Repair of Heritage Structures" ATAL AICTE Five Day Faculty Development Program on Innovation in Civil Engineering Materials & Techniques for Sustainable Development (ICEMTSD – 2021) organised by Department of Civil Engineering, NIT Silchar, Nov 2021.

**Prof. P. Rathish Kumar**, Invited Keynote Lecture delivered on "Key Indicators and Criteria for Assessment of Sustainable Building Materials" in the Three days International Conference on Recent Advances in Civil Engineering (ICRACE-2021) organised by Department of Civil Engineering, NIT Silchar.

**Prof. P. Rathish Kumar**, Invited Lecture on "Sustainable Construction Technology" at AICTE Training and Learning program (ATAL) Academy held between 26-07-2021 to 30-07-2021 at Indian Institute of Technology Indore.

**Prof. P. Rathish Kumar**, Invited Lecture on "Structural Assessment Repair and Rehabilitation of Structures", at Sri Krishna College of Engineering and Technology, Coimbatore, in online Two week AICTE Sponsored faculty development program held between 24-05-2021 to 05-06-2021.

**Prof. P. Rathish Kumar**, Invited Lecture on "Microstructure Characterization and Exploring Repair Material for a 800 Year Old Heritage Structure" in the One Week AICTE Sponsored STTP on "Repair, Rehabilitation and Retrofitting Techniques of Reinforced Concrete Structures (Phase-III)", on 3rd July 2021, organized by the Department of Civil Engineering, Srinivasa Ramanujan Institute of Technology, Anantapuram.

**Prof. P. Rathish Kumar**, Invited Talk on "Repair and Rehabilitation of Structures" in the One Week AICTE Sponsored STTP on "Repair, Rehabilitation and Retrofitting Techniques of Reinforced Concrete structures." Phase-II, on 31st May 2021, organized by the Department of Civil Engineering, Srinivasa Ramanujan Institute of Technology, Anantapuram.

**Prof. P. Rathish Kumar**, Keynote lecture on "Development of framework for sustainable materials assessment – Way forward", in session-4 at the International Conference on "Sustainable Approach For Resilient Infrastructure (IC-SAFRI2021)" on 27-06-2021, Organised by Department of Civil Engineering, CBIT Hyderabad and Jointly with Centre for Innovative Construction Technology (CICT), Department of Civil Engineering, University of Malaya, Kuala Lumpur (Malaysia).

**Prof. P. Rathish Kumar**, Expert Lecture on "Selection of Sustainable Materials and Techniques for Repair and Rehabilitation of Structures" in the One Week AICTE Sponsored STTP on "Condition Evaluation and Strengthening of Concrete structures." Phase-2, on 4th June 2021, organized by the Department of Civil Engineering, Srinivasa Ramanujan Institute of Technology, Anantapuram.

**Prof. P. Rathish Kumar**, Expert Lectures on Condition Assessment and ND Evaluation of Structures on 29th April 2020, Repair Methodology- Materials, Strategies and Method on 30th April 2020 and Rehabilitation and Strengthening of Concrete Structures on 1st May 2020 in the webinar series organised on Repair and Rehabilitation of Concrete Structures at Department of Civil Engineering,

Sree Chaitanya College of Engineering, Karimnagar in Association with ACCE (I)

**Prof. P. Rathish Kumar**- Special lecture on Materials and Techniques for Repair, Rehabilitation, and Retrofitting of Structures in the One Week Online Faculty Development Programme on Advances in Structural and Construction Engineering (ASCE) towards Sustainable Built Environment during 13- 18 July 2020 at Kakatiya Institute of Technology and Science, Warangal.

**Prof P. Rathish Kumar**, expert lecture on Key Sustainable Indicators in the One-week online QIP, Short Term Course on Sustainable Construction Practices by the Department of Civil Engineering, Indian Institute of Technology Indore on 16th October 2020

**Prof P. Rathish Kumar** Keynote lecture on Condition Assessment and Non-Destructive Evaluation of Concrete in the One Week online STTP on "Earthquake Analysis of Tall Buildings", 6-12 August 2020 at Srinivasa Ramanujan Institute of Technology.

**Dr. P. Rathish Kumar**, Keynote lecture on "Development of framework for sustainable materials assessment – Way forward", in session-4 at the International Conference on "Sustainable Approach For Resilient Infrastructure (IC-SAFRI2021)" on 27-06-2021, Organised by Department of Civil Engineering, CBIT Hyderabad and Jointly with Centre for Innovative Construction Technology (CICT), Department of Civil Engineering, University of Malaya, Kuala Lumpur (Malaysia)

**P. Rathish Kumar**, Invited Talk on "Selection of Sustainable Materials and Techniques for Repair and Rehabilitation of Structures" in the One Week AICTE Sponsored STTP on "Repair, Rehabilitation and Retrofitting Techniques of Reinforced Concrete structures." Phase-I, on 30th April 2021, organized by the Department of Civil Engineering, Srinivasa Ramanujan Institute of Technology, Anantapuram.

**P. Rathish Kumar**, Expert Lecture on Concrete Mix Proportioning-Durability and Sustainability Issues in the Three-Day Executive Development Program on Planning, Design and Construction of Culverts and

Bridges sponsored by NRIDA, Ministry of Rural Development, Government of India during 11-13 March 2021.

**P. Rathish Kumar**, Keynote lecture on Condition Assessment and Revision on Non-Destructive Assessment of Structures in the Five-Day Online Faculty Development Programme on "Recent Trends and Advances of Thrust Areas of Research in Civil Engineering" During 1st - 5th March 2021, Department of Civil Engineering, REVA University.

**P. Rathish Kumar**, Invited Talk on "Selection of Sustainable Materials and Techniques for Repair and Rehabilitation of Structures" in the One Week AICTE Sponsored STTP on "Condition Evaluation and Strengthening of Concrete structures." Phase-2, on 4th June 2021, organized by the Department of Civil Engineering, Srinivasa Ramanujan Institute of Technology, Anantapuram.

**Prof. N V Umamahesh.**, Invited talk - "Operational Flood Forecasting using Ensemble Weather Forecasting - A Review", Workshop on Use of Products from Ensemble Prediction Systems organized by National Centre for Medium Range Weather Forecast (NCMRWF), 21<sup>st</sup> Jan 2021.

**Prof. N V Umamahesh.**, Invited talk- "Sustainable Urban Water Management under Changing Climate", Civil Tech Talk organized by Telangana Academy of Skill and Knowledge (TASK), 27<sup>th</sup> April 2021.

**Prof. N V Umamahesh.**, Invited talk- "Modelling Impact of Climate Change on Water Resources", TEQIP Online - STTP on "Advanced Technologies in Water Resources Management (ATWARM-2020)" organized by Department of Civil Engineering, Government College of Engineering Aurangabad (Maharashtra State), 26<sup>th</sup> November 2020.

**Prof. N V Umamahesh.**, Invited keynote on "Fuzzy Logic and Fuzzy Systems", AICTE Sponsored One Week Online Short Term Training Program on Soft Computing Techniques in Civil Engineering: Water Resources, Structures and Transportation Applications, 23<sup>rd</sup> July 2020.

**Prof. N V Umamahesh**, invited talk on "Operational Flood Forecasting using Ensemble Weather Forecasting - A Review" in the Workshop on Use of Products from Ensemble Prediction Systems organized by National Centre for Medium Range Weather Forecast (NCMRWF) on 21.01.2021

**Prof. G. Rajesh Kumar.**, "Concrete from Grey to Green", Advancement in Materials & Techniques for Global Construction Industry, Indus University, 30<sup>th</sup> April 2021.

**Prof. G. Rajesh Kumar.**, "Concrete from Grey to Green", Recent Developments in Concrete Technology: Sustainability of Modern and Hybrid Composites, Marwadi University, 5<sup>th</sup> March 2021.

**Prof. G. Rajesh Kumar.**, "Special Concretes in sustainable construction", International Online training programme on Sustainability and Advances in Built Environment, Middle East College, Oman, Muscat, 22<sup>nd</sup> Dec 2020.

**Prof. G. Rajesh Kumar.**, "Special Concrete in sustainable construction", International Online training programme on Sustainability and Advances in Built Environment, Middle East College, Oman, Muscat, 27<sup>th</sup> June 2021.

**Prof. G. Rajesh Kumar**, Invited talk on 'Special Concrete in sustainable construction', International Online Training Program for Graduating and Alumni Students on "Sustainability and Advances in Built Environment" (SABE-2020), Department of Civil Engineering, Middle East College (MEC), Sultanate of Oman 22-Dec 2020.

**Dr. V. Ramana Murty**, Invited speaker on "Geotechnical Aspects and Investigations" in the second International Online Training Programme for Graduating and Alumni Students on "Sustainability and Advances in Built Environment" (SABE-2021)" organized by Department of Civil Engineering, Middle East College, Al Rusayl, Sultanate of Oman on 23-12-2020.

**Dr. V. Ramana Murty**, Invited lecture on "Stabilisation Methods for Low Volume Roads" in web seminar: PMGSY on 18-2-2021.

**Dr. V. Ramana Murty**, Invited lecture on "Properties of soils for Pavements" in web seminar: PMGSY on 25- 2-2021.

**Dr. V. Ramana Murty**, Invited lecture on "Geotechnical Case Studies" in online STPP on Repair, Rehabilitation and Retrofitting Techniques of Reinforced Concrete Structures, Dept. of Civil Engineering, Srinivasa Ramanujan Institute of Technology, Anantapuramu, A.P. on 28-6-2021.

**Dr. V. Ramana Murty.**, Invited talk - "Geotechnical Aspects and Investigations", Second International Online Training Programme for graduating & alumni students on 'Sustainability and Advances in Built Environment'(SABE-2020), 23<sup>rd</sup> Dec 2020.

**Dr. V. Ramana Murty.**, Invited talk - "Stabilization Methods for Low Volume Roads", In web Seminar, PMGSY, 18<sup>th</sup> Feb, 2021.

**Dr. V. Ramana Murty.**, Invited talk - "Properties of soils for Pavement Design", In web Seminar, PMGSY, 25<sup>th</sup> feb 20221.

**Dr. V. Ramana Murty.**, Invited talk - "Case Studies in Geotechnical Engineering", STTP on 'Repair, Rehabilitation & Retrofitting Techniques of Reinforced Concrete Structures', Srinivasa Ramanujan Institute of Technology (SRIT), Anantapuramu, 28<sup>th</sup> June 2021.

**Dr. P. Hari Krishna**, invited talk on "Importance of Geotechnical Engineering in Civil Engineering applications, Telangana Academy for Skill and Knowledge (TASK) in association with NIT Warangal and Smart InfrEST, on 9th February 2021.

**Dr. P. Hari Krishna**, invited talk on "Value Education - Its Importance in modern education, Forum for Science and Spirituality Discourses on 25th November 2020.

**Dr. Venkaiah Chowdary**, Invited talk - "Performance Grade Specifications for Polymer Modified Bitumen" 47th Webinar Lecture of Indian Geotechnical Society Guntur, Organized by Malineni Perumallu

Educational Society's Group of Institutions, Guntur, Andhra Pradesh, 15<sup>th</sup> July 2021.

**Dr. Venkaiah Chowdary**, Invited talk- "Zero Shear Viscosity: An Alternate Rutting Parameter", AICTE Sponsored Six Days Short Term Training Program (Phase-1) on "Recent Advances in Pavement Material Testing and Design", Organized by Misrimal Navajee Munoth Jain Engineering College, Chennai, Tamil Nadu, 19<sup>th</sup> Aug 2020.

**Dr. Venkaiah Chowdary**, Invited talk- "Road Safety in Work Zones" TEQIP III Sponsored Online Faculty Development Programme on "Road Safety Issues and Challenges", Organized by National Institute of Technology, Warangal, Telangana, 11<sup>th</sup> Dec, 2020.

**Dr. Venkaiah Chowdary.**, Invited talk- "Superpave Asphalt Mix Design", AICTE-ISTE Sponsored Refresher Programme (Series-I) on "Recent Practices in Construction and Design of Flexible and Rigid Pavements", Organized by Hyderabad Karnataka Education Society's Poojya Doddappa Appa College of Engineering, Kalaburagi, Karnataka, 24<sup>th</sup> Dec 2020.

**Dr. Venkaiah Chowdary.**, Invited talk- "Comparison between Marshall and Superpave Mixtures and Problems", AICTE-ISTE Sponsored Refresher Programme (Series-I) on "Recent Practices in Construction and Design of Flexible and Rigid Pavements", Organized by Hyderabad Karnataka Education Society's Poojya Doddappa Appa College of Engineering, Kalaburagi, Karnataka, 24<sup>th</sup> Dec 2020.

**Dr. Venkaiah Chowdary.**, Invited talk - "Road Safety during Construction", National Rural Infrastructure Development Agency Sponsored Three-Day Executive Development Programme on "Road Safety and Road Safety Audit for Rural Roads", Organized by National Institute of Technology, Warangal, Telangana, 3<sup>rd</sup> March 2021.

**Dr. Venkaiah Chowdary.**, invited talk- "Superpave Asphalt Mix Design", AICTE-ISTE

Sponsored Refresher Programme (Series-II) on "Recent Practices in Design and Construction of Flexible and Rigid Pavements", Organized by Hyderabad Karnataka Education Society's Poojya Doddappa Appa College of Engineering, Kalaburagi, Karnataka, 21<sup>st</sup> March 2021.

**Dr. Venkaiah Chowdary.**, Invited talk - "Comparison between Marshall and Superpave Mixtures and Problems", AICTE-ISTE Sponsored Refresher Programme (Series-II) on "Recent Practices in Design and Construction of Flexible and Rigid Pavements", Organized by Hyderabad Karnataka Education Society's Poojya Doddappa Appa College of Engineering, Kalaburagi, Karnataka, 21<sup>st</sup> march, 2021.

**Dr. Venkaiah Chowdary.**, Invited talk- "Superpave Asphalt Mix Design", AICTE-ISTE Sponsored Refresher Programme (Series-III) on "Recent Practices in Design and Construction of Flexible and Rigid Pavements", Organized by Hyderabad Karnataka Education Society's Poojya Doddappa Appa College of Engineering, Kalaburagi, Karnataka, 23<sup>rd</sup> may 2021.

**Dr. P. Venkateswara Rao**, Planning, Designing, Monitoring and inspection of wastewater treatment systems, AP HRDI - Bapatla - Residential Training Programme for engineers.

**Dr. P. Venkateswara Rao**, Global climate change and its Impacts, Kakatiya University, Warangal. o Dr. P. Venkateswara Rao, Introduction to Environmental Impact Assessment, L&T Engineers, Khammam.

**Dr. Arif Ali Baig Moghal**, Delivered Lecture for a 5 Day Faculty Development Program on "Recent Advancements in Geotechnical and Transportation Engineering" (RAGTE) titled "Role of Compaction Delay in Pavement Considerations" through Microsoft Teams Platform on 21 June 2021 (2.00 PM to 3.30 PM IST). Host Institute: Gudlavalluru College of Engineering Krishna District, Andhra Pradesh.



**Dr Arif Ali Baig Moghal.,** Invited talk- "Quantifying Compaction Delay for Plastic and Non-Plastic Fines with Additives - Pavement Consideration", TKM College of Engineering, Kollam, Kerala. Program sponsored by TEQIP-II, 1<sup>st</sup> September 2020.

**Dr Arif Ali Baig Moghal.,** Invited talk- "Compaction Delay Effect on Stabilized Plastic Fines", CVR College of Engineering, Hyderabad, India, 10<sup>th</sup> Oct 2020.

**Dr Arif Ali Baig Moghal.,** Invited keynote- "Understanding the Heavy Metal Retention Behaviour of Chemically Stabilized Semi-Arid Soils", Pandit Deendayal Petroleum University, Gandhinagar, India, 20<sup>th</sup> feb 2021.

**Dr Arif Ali Baig Moghal.,** Invited talk- "Heavy Metal Retention Behaviour of Lime Amended Semi-Arid Soils", SEWBS 2021, 11<sup>th</sup> March 2021.

**Dr Arif Ali Baig Moghal.,** Invited lecture on "Role of Compaction Delay in Pavement Considerations", Gudlavalleru College of Engineering Krishna District, Andhra Pradesh, 21<sup>st</sup> June 2021.

**Dr. Arif Ali BaigMoghal,** Geotechnical Challenges and Stability Requirements in the Design of Landfills, AMS College of Engineering, Avadi, Chennai, 27 April 2020.

**Dr. Arif Ali BaigMoghal,** Prospective Research Thrust Areas in Geotechnical and Geo-environmental Engineering, Gudlavalleru College of Engineering, Krishna District, Andhra Pradesh, 27 May 2020.

**Dr Arif Ali Baig Moghal,** Delivered invited talk titled "Compaction Delay Effect on Stabilized Plastic Fines" for "International Conference & Exposition on Mechanical, Material and Manufacturing Technology (ICE3MT2020)" through Zoom Platform on 10 October 2020 (9.15 to 11.15 AM IST). Host Institute: CVR College of Engineering, Hyderabad, India.

**Dr.T.P.Tezeswi,** invited talk- "ANN for Structural Health Monitoring of Structures" AICTE Sponsored One week Online STTP on "Applications of Neuro-Fuzzy Techniques in Academic Report 2020-21  
NIT Warangal

Civil Engineering", 9<sup>th</sup> to 14<sup>th</sup> November, 2020, Department of Civil Engineering, MVSR Engineering College, Nadergul, RR Dist.

**Dr. M. Shashi.,** Invited talk- "Advanced Surveying Instruments and Techniques", AISSMS's Polytechnic, Pune -411001, 24<sup>th</sup>feb - 2<sup>nd</sup> March 2021.

**Dr.D.Ravi Prasaad.,** Invited talk - "Hybrid fiber reinforced concrete-Development and properties", One Week Online Mode Faculty Development,Program from 29<sup>th</sup> June to 3<sup>rd</sup> July, 2020.

**Dr.D.Ravi Prasaad.,** Invited keynote- "Condition Assessment of Engineering Structures- Case Studies", Webinar titled "Latest Materials & Methods for Structural Engineering" organised by Siddharth Nagar, Narayanavanam Road, Puttur - 517583, Chittoor District, A.P. 6<sup>th</sup> June 2021.

**Dr.D.Ravi Prasaad.,** Invited talk - "Hybrid fiber reinforced concrete-Development and properties", One week Faculty Development Program on "Recent Advancements in Special Concretes, 29<sup>th</sup> september 2020.

**Dr.D.Ravi Prasaad.,** Invited talk - "Health monitoring of Civil Engineering structures- NDT", Webinar organised by Chaitanya Engineering college, Visakhapatnam, 18<sup>th</sup> june 2020.

**Dr. K.V.R. Ravi Shankar.,** Invited talk- "Pedestrian Safety Challenges in Indian Traffic Conditions", Resource Person", One Week Online Faculty Development Program on "Innovations in Civil Engineering", gudlavalleru engineering college, Andhra Pradesh, 23<sup>rd</sup> March 2021.

**Dr. K.V.R. Ravi Shankar.,** Invited talk - "Accident Data Collection and Analysis and Safer Road Design", Resource Person on the topics, Three Day Executive Development Programme on Road Safety & RSA for Rural Roads, Organized by NIT warangal, Sponsored by NRIDA, Ministry of Rural Development, GOI, New Delhi, 1<sup>st</sup>-3<sup>rd</sup> March,2021.

**Dr. K.V.R. Ravi Shankar.,** invited talk - "Road Safety And The Role Of Stakeholders: Future Directions", One Week International Student & Faculty Development Program, Shri Vishnu Engineering College for Women(A) in Association with Indian Concrete Institute, 26<sup>th</sup> feb 2021.

**Dr. K.V.R. Ravi Shankar.,** Invited talk- " Neuro Fuzzy Applications in Transportation Engineering", AICTE Sponsored One week STTP (online) on Applications of Neuro-Fuzzy Techniques in Civil Engineering (Series 2), Maturi Venkata Subba Rao (MVSR) Engineering College, Hyderabad, 11<sup>th</sup> Dec 2020.

**Dr. K.V.R. Ravi Shankar.,** Invited talk - "Neuro Fuzzy Applications in Transportation Engineering", AICTE Sponsored One week Online STTP on Applications of Neuro-Fuzzy Techniques in Civil Engineering, 9<sup>th</sup>- 14<sup>th</sup> November 2020.

**Dr. K.V.R. Ravi Shankar.,** Invited talk - "Road Safety Design Challenges in Indian Mixed Traffic Conditions", AICTE Sponsored One Week Online Short-Term Training Programme (STTP) on "Advanced Technologies in Transportation Engineering and Town Planning" at Coimbatore Institute of Technology, Coimbatore, 25<sup>th</sup> sep 2020.

**Dr. K.V.R. Ravi Shankar.,** Invited talk - "Pedestrian Safety Considerations", AICTE Sponsored One Week Online Short Term Training Program (STTP) on "Emerging Tools for Design and Analysis of Sustainable Roads (ETDASR 2020) Series 2 : Computational tools used in the development of sustainable road materials and traffic systems , VNR Vignana Jyothi Institute of Engineering and Technology during, 26<sup>th</sup> Aug 2020.

**Dr. K.V.R. Ravi Shankar.,** Invited talk - " Safer Roads by Design", AICTE Sponsored One Week Online Short Term Training Program (STTP) on "Emerging Tools for Design and Analysis of Sustainable Roads(ETDASR 2020), VNR Vignana Jyothi Institute of Engineering and Technology during, 28<sup>th</sup> July 2020.

**Dr. K.V.R. Ravi Shankar.,** Invited talk - "Road Safety Considerations For Indian Traffic Conditions", Organised by Nalla Narasimha Reddy Education Society's Group of Institutions, Hyderabad, 18<sup>th</sup> July 2020.

**Dr. K.V.R. Ravi Shankar.,** Invited talk - "Intelligent Transportation Systems", Organized by IGS student chapter, VR Siddhartha Engineering College, Vijayawada, Andhra Pradesh, 7<sup>th</sup> July 2020.

**Dr. K.V.R. Ravi Shankar.,** Invited talk- "Best Practice for Planning and Design of Safer Roads", Organized by Kkr & Ksr Institute Of Technology & Sciences, Guntur, Andhra Pradesh, 2<sup>nd</sup> July 2020.

**Dr. K.V.R. Ravi Shankar.,** Invited talk - "Intelligent Transportation Systems for mobility and safety", one week online faculty development program on Infrastructure challenges and future scenario in Civil Engineering: a global perspective, sri venkateswara college of engineering and technology, srikakulam, Andhra pradesh, 17<sup>th</sup> June 2020.

**Dr. K.V.R. Ravi Shankar.,** Invited talk- "Road Safety Challenges for Indian Mixed Traffic Conditions", Three day online STTP on Safety Measures in Transportation Systems, Muthoot Institute of Technology & Science, Kerala, 27<sup>th</sup> May 2020.

**Dr. K. Gopikrishna,** Invited Talk- "" Concept and Application of Weighted Residual Finite element method", AICTE sponsored online Short-Term Training Programme(STTP) on "Advances in Finite Element Methods for Industry & Research Applications", 23<sup>rd</sup> to 28<sup>th</sup> November 2020, Department of Civil engineering, Vasavi College of engineering, Hyderabad.

**Dr. K. Gopikrishna,** Invited Talk- "Importance of R factor in seismic capacity assessment of RC buildings", AICTE Sponsored STTP on Numerical & Experimental Seismic Analysis of Typical Structures, during 14<sup>th</sup> to 19<sup>th</sup> December 2020, by Department of Civil Engineering, SRIT, Ananthapur.

**Dr. G. V. Ramana**, Construction Materials for Concrete and Masonry Structures, at NITW for three-day National Workshop on Technical Skills from 28th -30th May-2019.

**Dr.G.V. Ramana**, Geo technical Investigations; Slope Stability for Approaches of Major bridges and flyovers, AP HRDI - Bapatla for Four Day Residential Training Programme on "Design of Bridges.

**Dr. G. V. Ramana**, Statistical Approach of In-Situ Shear Strength Parameters of Rock Mass, Indo-China research webinar series is jointly initiated by faculties from Shantou University, China, SVNIT, Surat & Indian Geotechnical Society Surat Chapter on Date: 8th -19th May 2020.

**Dr.Chinthala Sumanth**, Invited talk on "Four orders of Nature" as a Part of UHV programme conducted to Students of RGUKT Srikakulam on December 19, 2020

**Dr.Chinthala Sumanth**, Invited talk on " The Department of Civil Engineering, K.S.R. College of Engineering is organizing as one Week Online AICTE Sponsored STTP as "Forum on nurturing Clean-Water and Green-Waste" From 28.10.2020 to 04.11.2020 (Phase-II) through Google Meet platform.

**Dr B Raghuram Kadali.**, Invited talk- "Role of Perceived Technology and Knowledge of maintenance on adoption of EVs", Resource Person, One Week Online Faculty Development Program on "Recent Advancements in Geotechnical and Transportations", Gudlavalleru Engineering College, Andhra Pradesh, 21-25th June 2021, 25<sup>th</sup> June 2021.

**Dr. B. Raghuram K**, Crash data versus Surrogate safety data for traffic safety analysis, Invited talk, Department of Civil Engineering, Terna Engineering College, 04 April 2020.

**Dr. B. Raghuram K**, Evaluation of Urban Commuter Travel Behaviour and its impact on traffic emissions, One Week Short Term Training Program at Department of Civil Engineering, Shri Vishnu Engineering College for Women, 25th May 2020 to 30th May, 2020.

**Dr. B. Raghuram K**, Urban Travel Commuters Behaviour and its Impact on Environment, E-Convention at Department of Civil Engineering, J D College of Engineering and Management, 30th May 2020

**Dr. Manish Pandey.**, Invited talk - "Scour and Sediment Hazards in Open Channels", 3-day Online Training Program on River Dynamics, Flood and Sediment Hazards Assessments in Indian Rivers, 25<sup>th</sup> Aug 2021.

**Dr. Manish Pandey.**, "Scour and Sediment Hazards in Natural Streams", 3-day Online Training Program on Fluvial Disasters and Strategies in Risk Reduction, 29<sup>th</sup> Oct 2021.

**Dr. Manish Pandey**, one-week online international training program on "Water Resources Modelling" from 08-12 February 2021. Lecture 3: Hydraulics of open channel flow & turbulence study in open channel flow.

**Dr. Sudheer Kumar Yamsani.**, Invited talk- "Seismic Slope Stability Analysis Modeling Using Geo-studio", Five Day Online Faculty Development Program on "Earthquake Geotechnics", NITAP, Tadepalligudem, 24<sup>th</sup> Sep 2020.

**Dr. Sudheer Kumar Yamsani.**, Invited talk -"Geosynthetics for Sustainable construction", STTP lecture at Department of Civil Engineering, Kakatiya Institute of Technology and Sciences Warangal, India, 24<sup>th</sup> Nov 2020.

**Dr. Sudheer Kumar Yamsani.**, Invited lecture- "Research Methodology, An overview", Technical lecture at ARAMBA-2021, Research and Innovation cell, Bharatiya Engineering Science & Technology Innovation University, Anantapur, India, 20<sup>th</sup> Jan, 2021.

**Dr. Sanjit Biswas.**, Invited talk - "Finite element analysis of pile supported machine foundations", 5-day online workshop on Finite Element Analysis of Static and Dynamic Soil-structure Interaction of Geosystems. 7<sup>th</sup> July, 2021.

**Dr. V. Vamsi Krishna**, invited webinar on "Watershed Management" as part of Center of Excellence, Natural Resource Management, CMRIT Bangalore on 23-December-2020

**Dr Litan Kumar Ray.,** Invited keynote- "Basics of hydrologic modelling and parametric study of rainfall-runoff model", Expert talk in a one week online international training programme on Water Resources Modelling organised by Center for Advanced Agricultural Science and Technology for Climate Smart Agriculture and Water Management. Mahatma Phule Krishi Vidyapeeth. Rahuri (Maharashtra), 9<sup>th</sup> Feb, 2021.

**Dr. Shashi Ram,** Expert lecture on "Green Buildings-Sustainable Materials for Energy Efficient Building" in the One Week Faculty Development Programme on "Recent Advances in Sustainable Development and Green Buildings (RASGB-2021)", organized by Department of Civil Engineering, Jayamukhi Institute of Technological Sciences, Narsampet, Warangal on 06th April, 2021.

**Dr. Shashi Ram,** Guest lecture on "Impact of Green Building Materials", organized by Department of Civil Engineering, K. L. Deemed to be University, Andhra Pradesh on 22nd May, 2021.

**Dr. Shashi Ram,** Invited speaker on "A step Towards Achieving Sustainable Development Goals Through Energy Efficient Buildings" in the third International Online Training Programme for Graduating and Alumni Students on "Sustainability and Advances in Built Environment" (SABE-2021)" organized by Department of Civil Engineering, Middle East College, Al Rusayl, Sultanate of Oman during 27th June - 07th July 2021.

**Dr R. Ramesh Nayaka.,** Invited talk - "Sustainable Construction Materials for Low Cost Housing", AP HRDI - Three Day Online Programme on Cost Effective and Eco Friendly Building Materials and Technologies, Andhra Pradesh, 28<sup>th</sup> July 2021

**Dr. R Ramesh Nayaka.,** Invited lecture on "Building Information Modelling (BIM) Approaches in Construction Projects", OneDay Webinar BVRIT Narsapur, Telangana, 24<sup>th</sup> March 2021.

**Dr. R Ramesh Nayaka.,** Invited keynote- "Eco-Friendly Construction Materials and Practices for Affordable Housings", 3 Days workshop on Innovative Construction Materials and Practices, KL University,

Vijayawada, Andhra Pradesh, 28<sup>th</sup> september 2020.

**Dr. R Ramesh Nayaka.,** Invited keynote - "Writing a Research Article - Vital Tips for Beginners", JSS Academy of Technical Education, Bengaluru, Karnataka, 19<sup>th</sup> Aug 2020.

**Dr. R Ramesh Nayaka.,** Invited talk- "Building Information Modelling (BIM) Approaches in Construction Projects", Ambedkar Institute of Technology (AIT), Bengaluru, Karnataka, 5<sup>th</sup> Aug 2020.

**Dr. P. Hari Krisna,** Invited lecture on "Geotechnical aspects for foundations in problematic soils" in online FDP on recent advances in civil engineering - Department of Technical Education, Govt of AP during on 17 to 21st August 2021.

**Dr. P. Hari Krisna,** delivered a talk on "Improvement of soft skills for success in student life" in a FDP on Proportions of Soft skills and their relevance to Life and Academics conducted by Balaji Institute of Technology & Sciences, Narsampet during 15th to 17th September 2020

**Dr. P. Hari Krishna,** invited talk on "Importance of Concentration - Its Importance in Professional education, during orientation program conducted for Fresher's at Balaji Institute of Technology & Sciences, Narsampet on 3 - 6th December 2020.

## New lab established/ Equipment and Software procured

### CE 5204: Structures & Dynamics Laboratory

- In this laboratory, students are exposed to the latest instrumentation related to static and dynamic measurements, and methods of collecting and analyzing experimental data.
- Laboratory experiments are designed to reinforce basic theories of Statics, Solid Mechanics, Elasticity, and Dynamics and include:
  - Evaluating a beam used as force transducer- Static & Dynamic calibration, errors
  - Truss analysis – Data acquisition, errors
  - Torsion- Various Failure theories
  - Digital Image Correlation- full field strain/stress analysis, stress concentration factors
  - Vibration response of lumped mass and continuous systems

### Software &

ATENA - Finite Element Software nonlinear analysis and design of reinforced concrete structures (5 Licences)

### Equipment Procured



Structures & Dynamics Laboratory-Shake Table & Vibration of Beams (TEQIP-III)



Concrete Laboratory- Jaw Crusher (SRIC)



Concrete Laboratory-Segregator (SRIC)



Transportation Engineering Laboratory- Fatigue Testing Machine Test Setup (Plan Grants)



Concrete Laboratory-Creep Testing Equipment (Plan Grants)



Structures Laboratory- 100 Ton UTM (TEQIP-III)



Structures & Dynamics Laboratory- Drop Weight Impact Tester (IMPRINT-2)

S.No	Equipment/Software	Cost (INR) (Lakhs)	Funding
1	ATENA Software	11.97	TEQIP-III
2	Dynamic Shaker- Instrumentation	5.145	TEQIP-III
3	Structural Models	1.9425	TEQIP-III
4	UTM Computerized with 1000KN Capacity	12.6	TEQIP-III

5	Servo Shake Table	8.1375	TEQIP-III
6	Jaw crusher & Sieve Shaker	13.03715	SRIC
7	ADV Vectrino+	11.5	Plan Grants
8	Light weight deflectometer	5.985	Plan Grants
9	Sieves	0.90	Plan Grants
10	V-Box Machine	3.99784	Plan Grants

### Awards/ Recognitions/ Achievements

**Prof. K. V. Jayakumar** is now Professor Emeritus of the Department of Civil Engineering.

**Dr. P Rathish Kumar**, Professor, Department of Civil Engineering was the recipient of -

i) Earth Leader for Sustainable Development award by KPR Foundation and Council for Green Resolution (CGR) 2020,

ii) Selected for the DUO-INDIA Fellowship for Collaborative Research and Teaching with University of Dundee, Scotland

iii) Convener and member of BIS and is serving as committee member for CED-4 of Lime and Gypsum and

iv) Board of Studies Member of Civil Engineering Department of Kakatiya University

v) Member of the selection committee of the Japanese Government Monbusho and JSPS Scholarships for 2020.

**Dr.T.P.Tezeswi**, nominated as Reviewer for SERB Grant Proposals, December 2020.

**Dr.T.P.Tezeswi**, nominated as continuous reviewer for CSIR-FIRST Scheme, which has been initiated by CSIR in 2020 to support various fundamental research projects in CSIR Labs, April 2021.

**Dr. Chinthala Sumanth**, working on finalizing and implementing the United Nations Decade of Family Farming (UNDF) Regional Action Plan (RAP) and also for supporting the UNDF process at national level in Near East North Africa (NENA) countries

**Dr. Chinthala Sumanth**, participated in the e-launch of UNDF Regional Action Plan for the Near East and North Africa on November 24th, 2020.

### PhD Research guidance (Completed during the academic year)

**Syed Mubashirhussain**, completed his Ph.D with title "Rheological studies on identification of new rutting parameters for unmodified bitumen" under the guidance of **Dr. Venkaiah Chowdary**, June 15<sup>th</sup>, 2020

**Kamineni Aditya**, completed his Ph. D with title "Assessment of the effects of vehicular speeds on noise levels generated from vehicles as perceived by commuters and road users" under the guidance of **Dr. Venkaiah Chowdary**, June 22<sup>nd</sup>, 2020

**Jayakrishna Jammula**, completed his Ph. D with title "Mode-wise Travel Time Prediction Modelling in Mixed Traffic Conditions" under the guidance of **Dr. K.V.R. Ravi Shankar**, month, 2020



**Venkata Koteswara Rao**, completed his Ph. D with title "A study on Soil structure interaction Aspects of pile supported building frames" under the guidance of **Dr. P. Hari Krishna**, month, 2021

**Vinay Ashok Rangari**, completed his Ph. D with title "Hydrologic Modelling and Risk Assessment of Urban Floods: A Case Study of Hyderabad City" under the guidance of **Prof. N V Umamahesh & Dr. Ajey Kumar Patel**, month, 2020

**Ms.Radhika KS**, completed her Ph. D with title "Studies on static and dynamic behavior of hybrid fiber reinforced and functionally graded RC beams" under the guidance of **Dr.D.Ravi Prasad**, month, year

**Mohammed Abdul Latheef**, completed his Ph. D with title "Efficacy of EICP (Enzyme Induced Carbonate Precipitation) Techniques for Tropical Soils – Geotechnical and Geoenvironmental Applications" under the guidance of Dr Syed Abu Sayeed Mohammed & **Dr Arif Ali Baig Moghal**, Dec, 2021

**P. Harsha Praneeth**, completed his Ph.D with title "Micro-structure Based Multi-scale Thermo-Mechanical Characterization Of Reinforced Concrete" under the guidance of **Dr.T.P.Tezeswi**, June, 2020

**B. Murali Krishna**, completed his Ph.D with title "Image Based Framework For Condition Assessment Of RCC Bridge Girders" under the guidance of **Dr.T.P.Tezeswi**, August, 2020

### International visits of the faculty members

**Prof. M Chandra Sekhar** visited University of Santiago, DeCompostilla, Spain as Erasmus+ KA107 Teaching Staff Mobility during 8<sup>th</sup>-12<sup>th</sup>,2021.

### Distinguished guests interaction with the department

**Dr.Hans Lobel**, Pontifical Catholic University of Chile, 7<sup>th</sup> webinar on- "Quantification of Urban Space Perception by Means of AI and Discrete Choice Models", 31st Oct 2020. Transportation Division.

**Dr. Tomer Toledo**, Technion – Israel Institute of Technology, 8<sup>th</sup> webinar on "Simulation-based design and optimization of signal control plans" , Nov 20th 2020. Transportation Division.

**Prof. George Yannis**, National Technical University Athens (NTUA) , 10th Webinar- "Road Safety Challenges in Digital Era", Nov 27, 2020. Transportation Division.

**Prof. Lin Jen-Jia**, NTU, -TERT2020, 11th Expert Talk on "Metro -Induced Gentrification & Inclusive TOD", Dec 4th, 2020, Transportation Division.

**Prof. Shankar Venky**, Texas Tech University, 12th Webinar, "Opportunities for modeling pedestrian exposure in urban environment", Dec 11th, 2020, Transportation Division.

**Dr. Fan Yin**, Assistant Research Professor, National Center for Asphalt Technology, Auburn, USA, 'Balanced mix design', Sept 4, 2020

**Dr. Raymond (Buzz) Powell**, Assistant Director, Senior Research Engineer, National Center for Asphalt Technology, Auburn, USA, 'Accelerated Pavement Testing at NCAT Pavement Test Track', Sept 11, 2020

**Prof Ray Brown**, Director Emeritus, National Center for Asphalt Technology, Auburn, USA, Investigation of Asphalt Pavement Performance Problems, Sept 18, 2020

**Prof Nick Thom**, Professor, University of Nottingham, UK, Design of Cement Grouted Macadams, Sept 26, 2020

**Dr. Jonanthan D Hall**, Assistant Professor, University of Toronto, Canada, Pareto Improvements from Lexus Lanes: The Effects of Pricing a Portion of the Lanes on Congested Highways, Oct 3, 2020

**Dr Rajesh Paleti**, Assistant Professor, Pennsylvania State University, USA, Count Data Modelling: Recent Advances and Transportation Applications, Oct 10. 2020

### Best student papers and other achievements

- The research of Prof. P. Ratish Kumar and his PhD student Nikhil Degloorkar was highlighted in a national newspaper:



- CED B.Tech student Mr. Sagar Kundani (2017-2021 batch) scores 99.95 percentile in CAT

## PERFECT SCORE

- Sagar Kundani of the 2017-21 batch secured 99.95 percentile
- Abdus Samad, another final year student from the institute, managed to secure 99.14 percentile
- A final year engineering student, VKR Sai Prashanth, secured 98.8 percentile

**Abdus Samad**

**Prashanth**

🎯

I would like to pursue MBA from IIM Ahmedabad, Bengaluru, or Kolkata. If I fail to secure a seat in one of the three institutes, I will take up the offer I received in the campus placement —**Sagar Kundani**

## Details of students joined in higher educational institutes

Students Placed on campus: B.Tech. **56** M.Tech. **30**

<b>B.Tech</b>			
<b>S.No</b>	<b>Name</b>	<b>Branch</b>	<b>Placement details</b>
1	S Jagadisan	Civil	Byju's
2	Abhishek Johri	Civil	Axis Bank
3	Anna Rakesh	Civil	Tredence analytics
4	Apurva Harsh	Civil	Axis Bank
5	Bodugam Bhargavi	Civil	Axis Bank
6	Ananya Chepyala	Civil	Fractal Analytics
7	Divyansh Dubey	Civil	Accelerize 360
8	E Dhruva Teja	Civil	Byju's
9	G Soumya	Civil	Axis Bank
10	Gundagani Rathan	Civil	Byju's
11	Hare Krishna Kumar	Civil	O9 Solutions
12	Himanshu Bohra	Civil	Jaro
13	Sai Srinivas Jetti	Civil	K-12 Techno Services Pvt. Ltd.
14	Rukmini Kanumetta	Civil	ABG
15	Sahith Kunchapu	Civil	K-12 Techno Services Pvt. Ltd.

16	Roshan Manduri	Civil	Byju's
17	Meghana Kalakuntla	Civil	MasterCard
18	Mettupalle Sravika	Civil	K-12 Techno Services Pvt. Ltd.
19	Mohammed Aliuddin Saif	Civil	O9 Solutions
20	Rabiul Islam	Civil	L&T
21	Sai Vineet A V S S	Civil	Impact Analytics
22	Sapan Srivastav	Civil	Deloittee
23	Sonali Pandey	Civil	MasterCard
24	Sruthy Saju	Civil	Axis Bank
25	Aditya Tammewar	Civil	Kagool
26	Trishank Kumar Manikpuri	Civil	Capgemini
27	Vuppala Saikiran	Civil	L&T
28	Viraj Kshithiz Reddy Yasa	Civil	Deloittee
29	Abhijit Kumar	Civil	TATA PROJECTS
30	Akhil Reddy Pendela	Civil	Turito
31	Anamika P Mali	Civil	Blackbuck
32	Ansul Kumar	Civil	L&T
33	Ansul Kumar	Civil	Tredence analytics
34	Ashwin Kumar	Civil	VA Tech WABAG
35	Bollampally Sreeramareddy	Civil	O9 Solutions

36	Dhananjay Vijay	Civil	TATA PROJECTS
37	G S Sushanth Reddy	Civil	ZS
38	Rupal Hande	Civil	Kagool
39	Harsh Anilkumar Kukdeja	Civil	CollegeDunia
40	Kanne Sravan Kumar	Civil	Byju's
41	Karnati Nagamani	Civil	Fractal Analytics
42	Sagar Kundnani	Civil	MasterCard
43	Meda Manoj	Civil	BYJU's
44	Mohammed Fawaz Sharief	Civil	CollegeDunia
45	Mujahid Faraz Siddiqui	Civil	ASC Infra
46	Prasanna Kethireddy	Civil	Novartis Healthcare
47	Richa Singh	Civil	WIPRO
48	Sachin Goyal	Civil	ASC Infra
49	Shruthi Salem	Civil	MasterCard
50	Sharmishta Tallapally	Civil	Byju's
51	Utkarsh Singh	Civil	L&T
52	Vanguru Roshan	Civil	ASC Infra
53	Vatti Srujana	Civil	KEC
<b>M.Tech</b>			
1	A Bhavana	Civil(RS&GIS )	SMEC
2	Balaji K S	Civil (Structures)	Welspun

3	Gadiparthi Hema Sudhakar	Civil(Structures)	L&T
4	Gurrala Prakash	Civil (Structures)	Welspun
5	Kethepalli Vamsi Gopala Krishna	Civil(Structures)	L&T
6	Prashant Verma	Civil(Structures)	L&T
7	Ravi Teja Deva	Civil(Structures)	ASC Infra
8	Tejavath Shirisha	Civil(Structures)	L&T
9	Vasa Anusha	Civil(Structures)	L&T
10	Vodepalli Manaswini	Civil(Structures)	L&T
11	Anish Banerjee	Civil(CTM)	L&T
12	Anshul Kushwaha	Civil(CTM)	ASC Infra
13	Ashwani Kumar Jaiswal	Civil(CTM)	Byju's
14	Gundeti Srimadhusai	Civil(CTM)	ASC Infra
15	Nirmal Raj	Civil(CTM)	ASC Infra
16	Rekha Toshniwal	Civil(CTM)	Jaro
17	Rekha Toshniwal	Civil(CTM)	Welspun
18	Payal Ukey	Civil(CTM)	KEC
19	Atla Bindu Madhavi	Civil (WRE)	Welspun
20	Suram Sandeep	Civil(WRE)	KEC
21	Kunchakarra Samatha Ratan	Civil(EE)	K-12 Techno Services Pvt. Ltd.
22	Kolluri Srinivas Reddy	Civil(TE)	KEC



23	Kottur Rajkumar	Civil(TE)	L&T
24	Mewa Prasad Sahu	Civil(TE)	Spectrum Consultants
25	Sathi Surya Narayana Reddy	Civil(TE)	L&T
26	Suraparaju Venkata Sai Tharun	Civil(TE)	Spectrum Consultants
27	Ekansh Sharma	Civil(GTE)	KEC
28	Anuj Kumar	Civil(RS&GIS )	SMEC
29	Barsale Sayali Bhagwan	Civil(RS & GIS)	L&T
30	Jaladanki Sreekanth	Civil(RS & GIS)	K-12 Techno Services Pvt. Ltd.

## Student Placements- Companies At a Glance

Students Placed on campus: **B.Tech. 56** **M.Tech. 30**



## Department Outreach Activities

**Prof. P. Rathish Kumar**, Primary Evaluator, Toyathon 2021, Ministry of Education's Innovation Cell, GoI, in collaboration with Ministry of Education, Ministry of Women and Child Development, Ministry of Commerce and Industry, Ministry of Textiles, Ministry of Information and Broadcasting, Ministry of MSME.

**Prof. P. Rathish Kumar**, Member of the B8 Committee-Management, Maintenance and Rehabilitation Committee of the Indian Roads Congress for a Period of Three Years from October 2021.

**Prof. P. Rathish Kumar**, Member of the Building Works Committee (BWC) of the School of Planning and Architecture, Vijayawada.

**Prof. P. Rathish Kumar**, Participated as sectional committee member of the CED 4 in the Twenty Fourth Meeting of the Building Lime and Gypsum Products of the Bureau of Indian Standards (BIS).

**Prof. P. Rathish Kumar**, Advisor Committee Member, NCB Hyderabad, 2020-21.

**Prof. P. Rathish Kumar**, Member Board of studies, Vaagdevi College of Engineering, Warangal 2020-21.

**Prof. P. Rathish Kumar**, Member Board of studies, Sri Guru Gobind Institute of Technology and Engineering, Nanded

**Prof. P. Rathish Kumar**, Member Board of studies, Kakatiya University, Warangal, 2020-21.

**Prof. P. Rathish Kumar**, Member Board of studies, JNTU, Hyderabad, 2020-21.

**Prof M Chandra Sekhar**, BOS Member, SVUniversity, Tirupati, Since 2019.

**Prof M Chandra Sekhar**, State Level Expert Appraisal Committee, MoEF, Govt of AP, Since 2021.

**Prof M Chandra Sekhar**, Member, Curriculum Revision, AP State Council for Higher Education, Govt of AP, Since 2020.

**Prof M Chandra Sekhar**, Member of Editorial Advisory Board of Analytical Chemistry Letters, Since 2020.

**Prof M Chandra Sekhar**, BOS Member, IST, JNTU Hyderabad, Since 2021.

**Prof. V. Ramana Murty**, Reviewer for journal of Sciences in Cold and Arid Regions, Since, 2020.

**Prof V. Ramana Murty**, BOS member for VR Sidhartha Engg. College, Vijayawada, Since 2020.

**Prof. V. Ramana Murty**, BOS member for JNTU - Kakinada, Since 2019.

**Dr. P. Hari Krishna**, BOS member of NBKRIST, Vidyanagar, Nellore Dist, Since 2019.

**Dr. P Hari Prasad Reddy**, BOS member for KHIT, Guntur, Since April 2021.

**Dr. P Hari Prasad Reddy**, External expert of Doctoral Committee, PDEU, Gujarat, Since Aug 2021.

**Dr Arif Ali Baig Moghal**, Conference/Symposia Sessions chaired, International Conference & Exposition on Mechanical, Material and Manufacturing Technology (ICE3MT2020), CVR College of Engineering, Hyderabad, 09-10 Oct, 2020.

**Dr Arif Ali Baig Moghal**, Conference/Symposia Sessions chaired, Indian Geotechnical Conference-2020, AU, Visakhapatnam, 17-19 Dec, 2020.

**Dr.D.Ravi Prasad**, BOS member for NSRIT, visakhapatnam, Since Jan 2021.

**Dr. Chinthala Sumanth**, working on finalizing and implementing the United Nations Decade of Family Farming (UNFFF) Regional Action Plan (RAP) and also for supporting the UNFFF process at national level in Near East North Africa (NENA) countries

**Dr. Chinthala Sumanth**, participated in the e-launch of UNDF Regional Action Plan for the Near East and North Africa on November 24th, 2020.

**Dr. V. Ramana Murty**, Conference/Symposia Sessions chaired, Indian Geotechnical Conference-2020, AU, Visakhapatnam, 17-19 Dec, 2020.

**Dr. M. Shashi**, Conference/Symposia Sessions chaired, UASG-2021, IIT Roorkee, 02-04 April, 2021.

**Dr. M. Shashi**, Conference/Symposia Sessions chaired, ITHES-2021, NIT Warangal, 28-30 April, 2021.

**Dr. Manali Pal**, Conference/Symposia Sessions chaired, ITHES-2021, NIT Warangal, 28-30 April, 2021.

**Dr. V. Vamsi Krishna**, Conference/Symposia Sessions chaired, ITHES-2021, NIT Warangal, 28-30 April, 2021.

**Dr. Manish Pandey**, Guest Editor In Frontiers Journal (SI: The Urban Fluvial and Hydro-Environment System), Since 2021.

**Dr. Manish Pandey**, Conference/Symposia Sessions chaired, Hydro'20, NIT Rourkela, 26-28 March, 2021.

**Dr. Manish Pandey**, Conference/Symposia Sessions chaired, ITHES-2021, NIT Warangal, 28-30 April, 2021.

**Dr. Manish Pandey**, Conference/Symposia Sessions chaired, Hydro'21, NIT Surat, 23-25 Dec, 2021

**Dr. Manish Pandey**, Conference/Symposia Sessions chaired, 2nd YPN, IAHR, 30 Nov - 2 Dec 2021.

**Dr B Raghuram Kadali**, Conference/Symposia Sessions chaired, Innovative and Sustainable Technologies in Civil Engineering (ISTCE-2021), 24-25th Sep 202

## Department Association/Students Clubs Activities

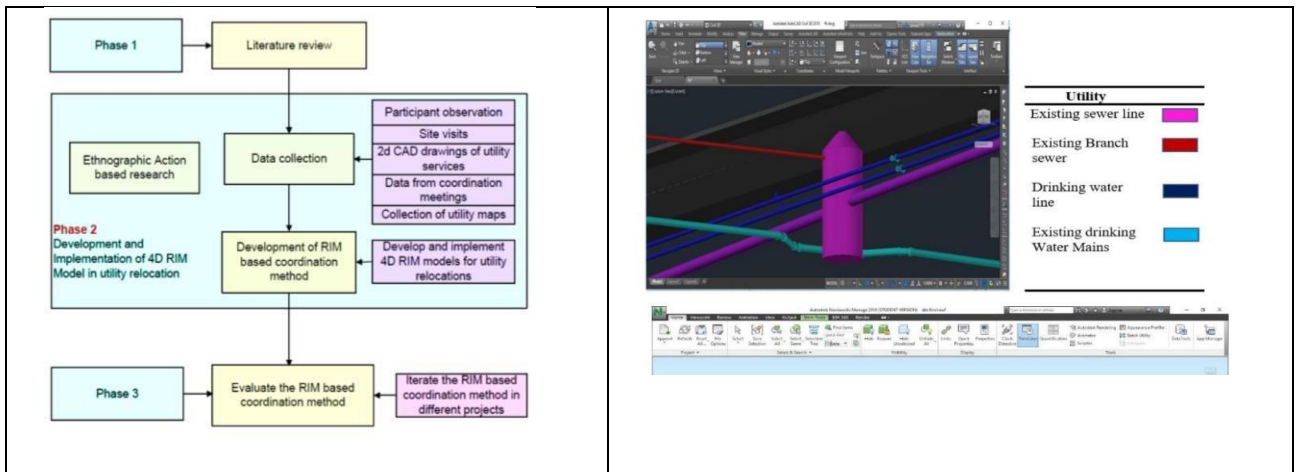
The Civil Engineering Association (CEA) conducted several events during the academic year:

<b>Event Name</b>	<b>Date</b>
Worth the risk	21-11-20
The Recruitment Saga 1.0	22-11-20
Chai Pe Charcha	03-12-20
Inaugural Ceremony	05-12-20
The Recruitment Saga 2.0	04-12-20
Expert Talk on Project Site Enabling	12-12-20
The Recruitment Saga 3.0	23-12-20
Career Guide	30-12-20
The Fact Hunt Quiz 11 to	16-01-21
The recruitment Saga 4.0	25-01-21
The Recruitment Saga 5.0	14-02-21
The recruitment Saga 6.0	22-02-21
Eunoia - Newsletter	23-03-21
Guest Lecture- Growth Opportunities	21-01-21
Meme Making	26-02-21
Freshers	28-02-21
Online Aptitude Test 12,13,	14 - 03-21
Talk with Tnp	17-03-21
The recruitment saga 7.0	16-03-21
The recruitment saga 8.0	27-03-21
The recruitment saga 9.0	18-04-21
Career Guide 2.0 - Dr Manimaran	31-03-21
Resume Making	23-04-2021
The recruitment saga 10.0	02-05-21
Mock Placement drive 20,	21-05-21

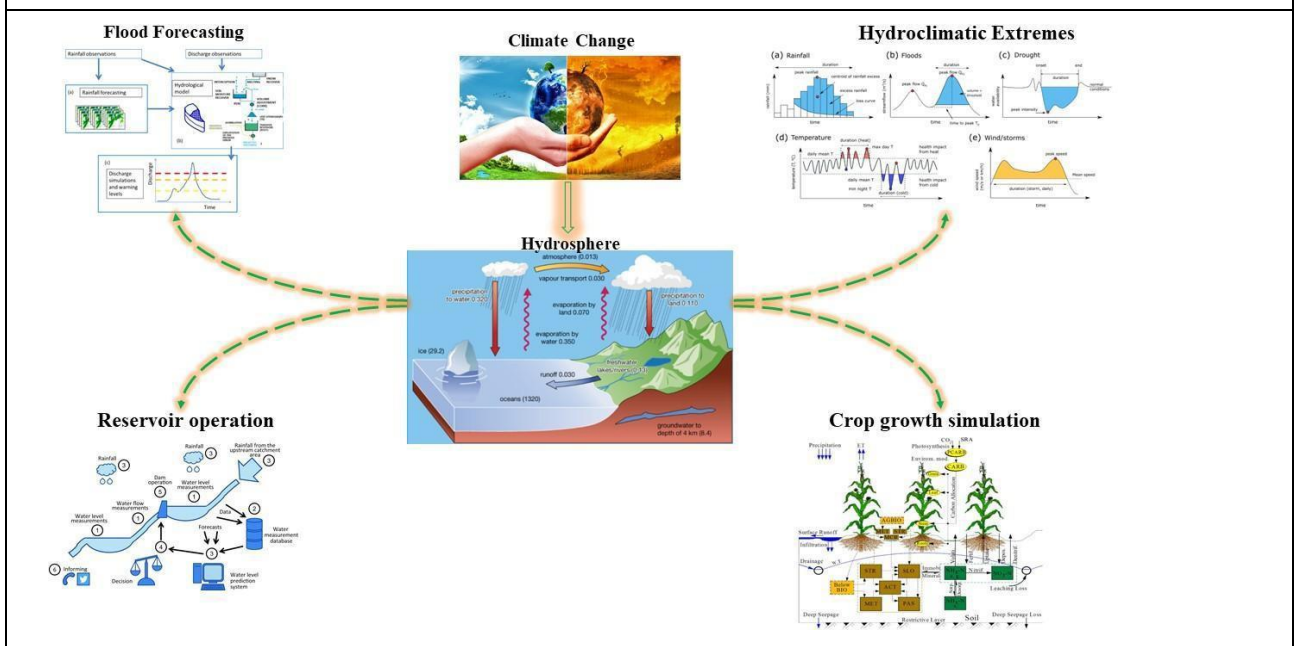
**Any other Department Specific**

**Highlights of the department** (Research, state of art equipment, facilities, innovative practices etc. With photographs)

**Research Highlights:**

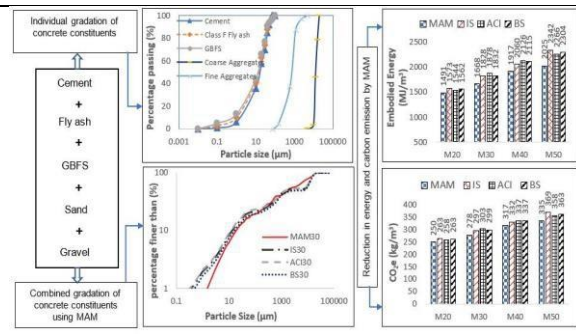
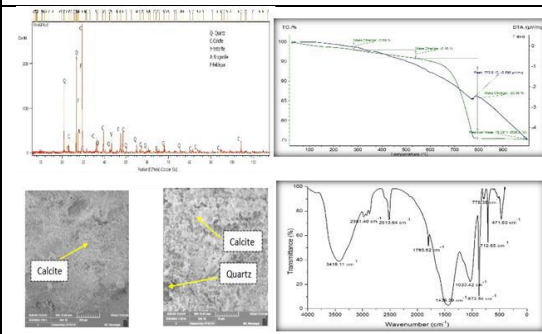


Development of a Road Information Modeling (RIM) Based Coordination Method for Utility Relocations



Climate change is the global phenomenon of climate transformation characterized by the changes in the usual climate system of the planet (regarding temperature, precipitation, and wind) that are especially caused by human activities. The climate system is a highly complex system consisting of five major components: the atmosphere, the hydrosphere, the cryosphere, the lithosphere and the biosphere, and the interactions between them. The hydrosphere is a component of the climate system comprising liquid surface and subterranean water, such as oceans, seas, rivers, lakes, underground water, etc. Human contributions to greenhouse gases in the atmosphere are warming the earth's surface resulting in climate change. This process is projected to increase the evaporation of surface water and accelerate the hydrologic cycle. In turn, a warmer atmosphere can hold more water vapour leading to alterations in the timing and patterns of rainfall distribution. The impact of climate change on the hydrosphere can be studied broadly under four thrust areas namely Hydro-climatic

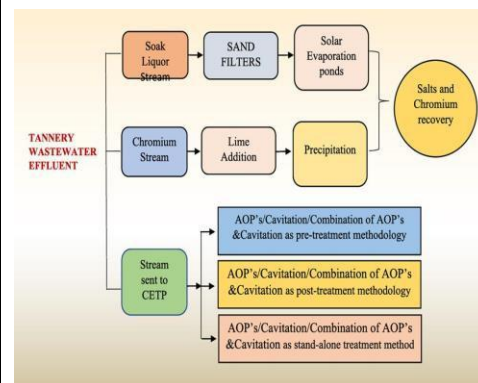
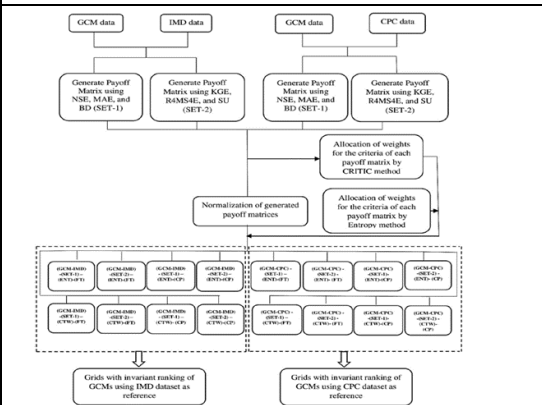
extremes, Flood forecasting, Reservoir operation and crop growth simulation. The Water & Environment Division of the Department of Civil Engineering is actively pursuing research in these four thrust areas.



800-Year-old ancient mortars in Ramappa Temple of Southern India were selected for Characterization studies. X-ray Diffraction method was used to study the mineral phases. Morphological features were understood using Scanning Electron Microscopy. X-ray Fluorescence method was utilized for obtaining chemical composition.

FTIR method was used to identify the presence of organic and inorganic compounds.

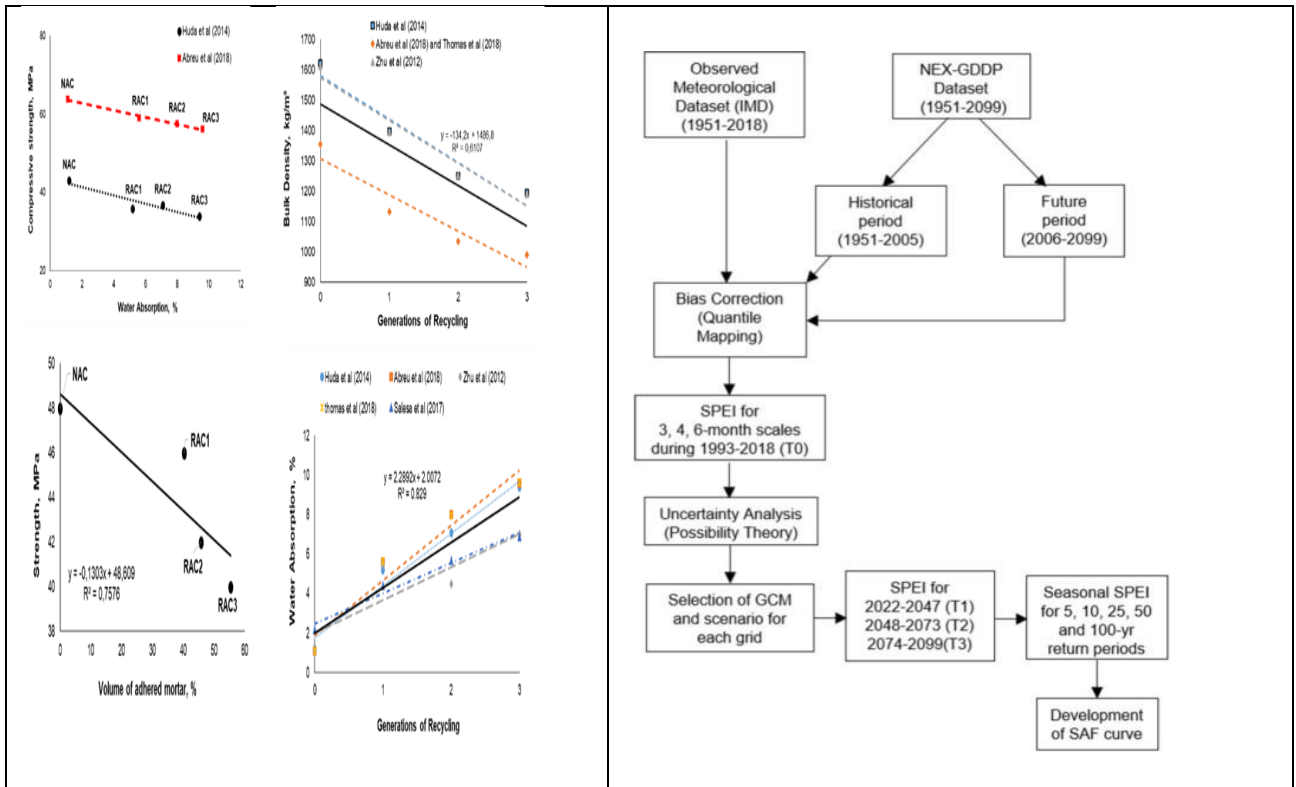
PSD of total solid phase concrete constituents influences properties of concrete. MAM based mix demanded more fine aggregate than the mixes of IS, ACI and BS. MAM based mixes consumed less binder compared to IS, ACI and BS mixes. MAM mixes exhibited less energy use and CO2 emission than IS, ACI and BS mixes. Replacement of SCMs with OPC and MAM granulometry results in sustainable concretes.



The performance of a General Circulation Models (GCM) is site-specific and the ranking pattern varies spatially. The past performance of GCMs from Coupled Model Intercomparison Project phase 6 (CMIP6) in simulating the maximum and minimum temperature across India are evaluated and ranked by different ranking procedures. Different criteria and methods involved in the ranking procedures are carefully selected to address the subjectivity involved in ranking of GCMs. The performance of best performing GCM is attributed to homogenous climatic zones and its corresponding topological features.

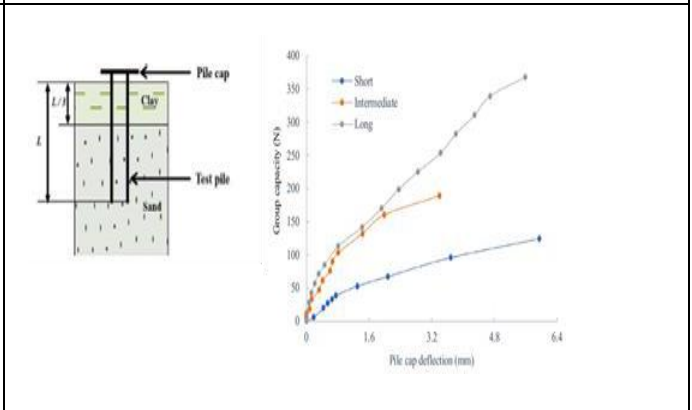
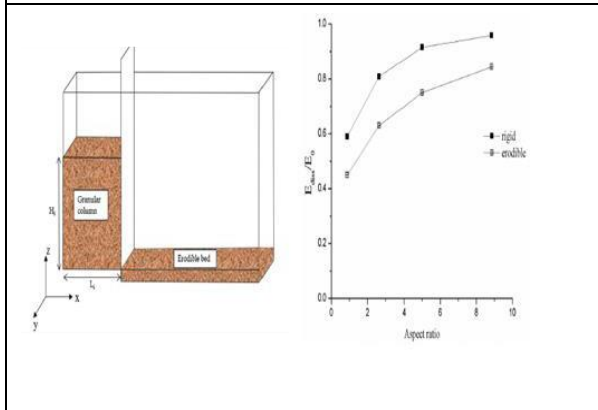
Hydroxyl radical generation through advanced oxidation process and cavitation method. Degradation of tannery wastewater effluent through hydroxyl radicals generated. Parameters affecting Cavitation and Advanced oxidation process explained. Discussion on energy, cost and treatment removal efficiencies of all the processes.





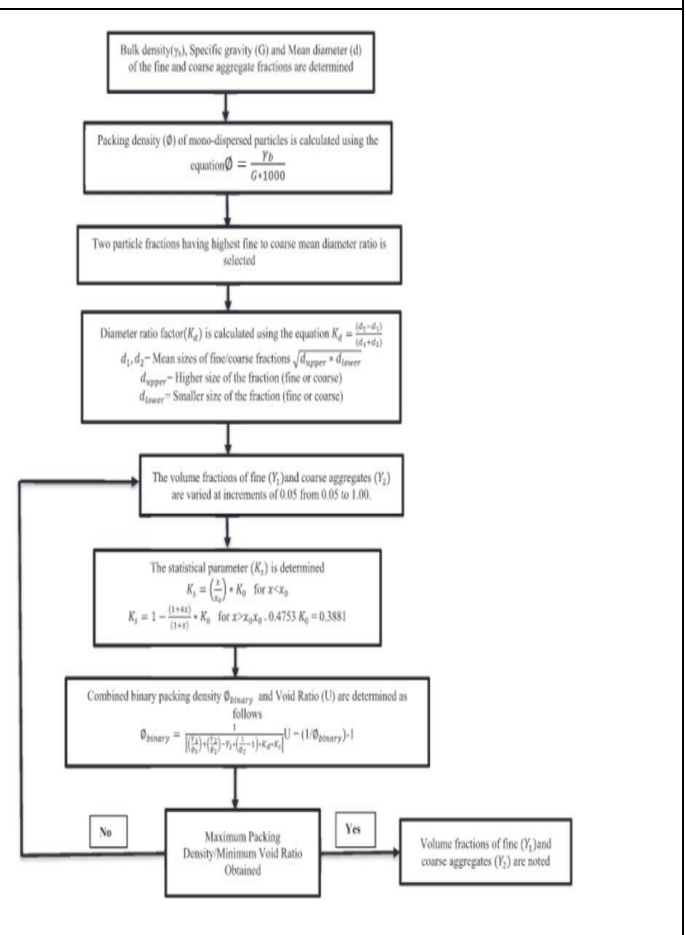
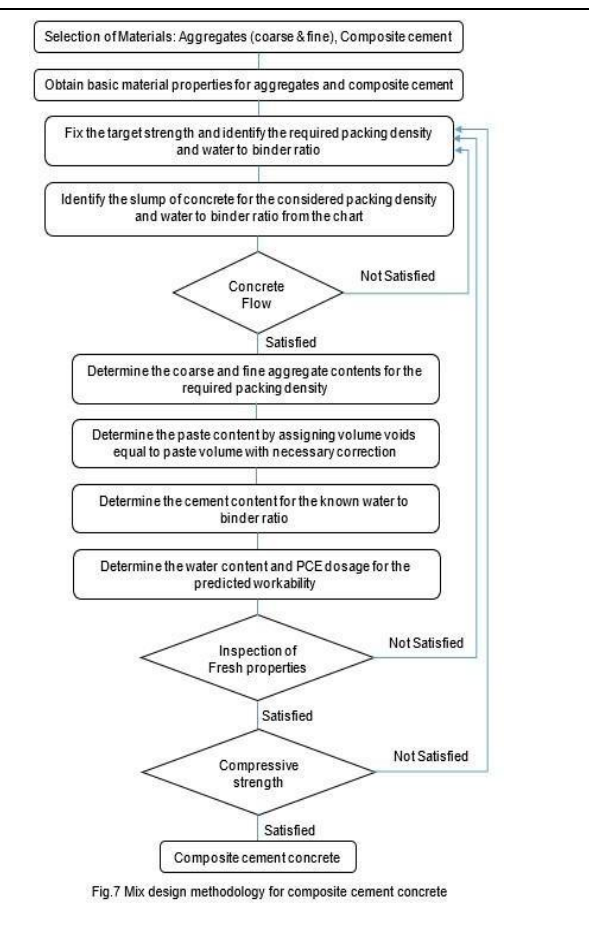
The properties of aggregate decreased with the generations of recycling which is attributed to the decreased quality of aggregate. A linear relationship of  $y = -134.2x + 1486$  and  $y = 2.29x + 2.00$  is obtained between bulk density and water absorption respectively with generations of recycling. The volume of adhered mortar was 55%, 76% and 88% of aggregate volume for first, second and third generation recycled aggregate. The compressive strength of third generation recycled concrete is 33%, 20% and 22% lesser respectively than conventional concrete. The usage of multi-recycled concrete is contributing to the sustainability and effective management of non-renewable energy resources.

The precipitation magnitude is expected to increase in pre-monsoon, monsoon, and Kharif seasons over most of the areas in Maharashtra. Except for the monsoon season, the potential evapotranspiration is projected to increase over 50% of the total area. Increase in the temperature profile is noticed over all the regions in Maharashtra during the twenty-first century. The extreme drought condition during post-monsoon, pre-monsoon and Rabi seasons shows an increase in the frequency as compared to historical period. The SAF curve reveals that, in most of the cases, the percentage of drought-affected area is expected to increase for high magnitude of severity. In addition, the highest increment in the drought-affected area is observed during the Rabi season in future.



Landslides, debris flows and avalanches are geophysical hazards, which require sophisticated multi-scale analysis to understand the nature of the flow behaviour. This article discusses **numerical investigation of the behaviour of granular flows through granular column collapse model**. The column is allowed to collapse on an erodible bed of granular particles to understand the mechanism of entrainment. Discrete Element Method (DEM) is used to model the column collapse to investigate the run-out length and velocity of flow. In this study, substantial variations were observed in the final run-out lengths in the presence of an erodible bed in the model. Column collapse over erodible bed resulted in thicker final deposits, which is evident from the increased coordination number.

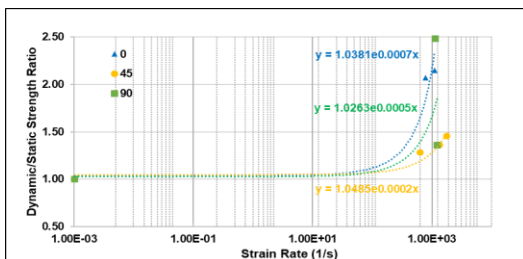
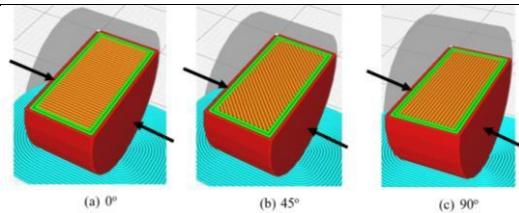
**Soil-pile interaction significantly influences the behavior of pile groups under lateral loading.** The current study aims to understand the behavior of individual pile and pile groups under lateral loads in uniform sand (relative density 80%) and stratified soil (sand overlain by clay) by conducting laboratory model tests. Test tank of length 1.52 m, width 0.76 m, height 1.2 m and model aluminum test piles of 16 mm diameter (D) and aspect ratios 12, 25 and 40 were used for the tests. The response of individual pile and 2 × 2 pile group was evaluated in terms of deflection at pile head for varying aspect ratio and pile spacing of 3D, 5D and 7D for the case of pile groups. It is noted that at all stages of the loading, the pile head deflection of the single pile and pile group was reduced for the stratified soil when compared to the uniform sand bed. However, the efficiency of the pile groups embedded in the stratified soil medium was observed to be less than that of the pile groups embedded in the uniform sand.



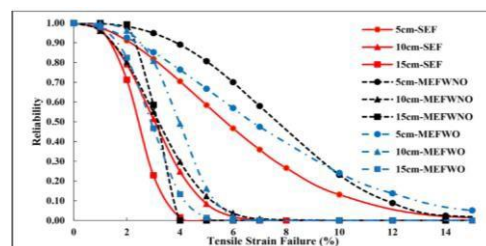
### Replacement of SCMs optimised through packing density and compressive strength.

Packing density is the main factor influencing workability and strength. Tri-relationship between strength, packing density and W/B ratio is established. Workability and compressive strength influencing parameters are correlated. Developed mix design for CC concrete using packing density approach.

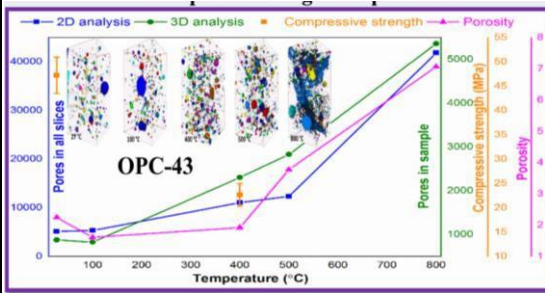
**Physico-chemical characteristics of two non-hydraulic lime binders Type-I and Type-II lime fly ash binders** were prepared by replacing lime with fly ash from 0 to 30%. In addition, 5% gypsum was added to the binder mix for obtaining quicker setting. Two particle packing theories Modified Toufar Model (MTM) & J.D Dewar Model (JDD) and Indian Standard Codes (IS: 650-2000 and IS: 383-2016) were considered for attaining different gradations of sand. Mix proportion 1:3 (Binder: Sand) lime-fly ash-based mortars were investigated for the flowability and compressive strength properties. The lowest minimum void ratio of 0.574 was obtained for MTM proportioned sand. Compressive strengths of Type-I and Type-II lime fly ash-based mortars were highest for MTM particle packing sand with strengths 2.320 MPa and 0.738 MPa respectively after 28 days of curing. From the study, it can be concluded that using Type-I lime fly ash-based mortar and MTM particle packing theory, repair mortars with reasonably good strength can be achieved.



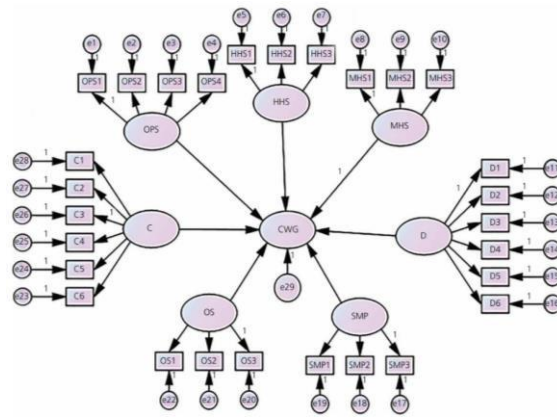
**High strain rate response of 3D printed PLA** has been characterized for 0°, 45° and 90° print orientations and is found to be significantly brittle compared to the corresponding quasi-static response. The mechanical response of PLA is observed to transition from typical polymer/foam type hardening and densification behavior in the quasi-static loading regime to the quasi-brittle and strain softening behavior observed in the high strain rate loading regime. In this study, the dynamic increase factors for various orientations of PLA are reported and strain rate sensitivity is quantified.



**Mechanical reliability of extruded PLA filaments.** The mechanical characteristics of 3D printed polymer materials such as strength and stiffness depends on extruded filaments, which are fundamental building blocks. Currently there is a lack of studies on the effects of length scaling on the strength and reliability of extruded filaments. In this study, single extruded filaments (SEF), multiple extruded filaments without overlap (MEFWNO) and multiple extruded filaments with overlap (MEFWO) of Polylactic acid (PLA) material with different gauge lengths are tested for axial tensile modulus, ultimate strength, failure strain and toughness. A probabilistic strength prediction model of individual extruded filaments, as well as extruded filaments with and without overlap is developed, wherein the 2-parameter Weibull distribution is used to determine the probability of failure of extruded filaments at various stresses.



**Thermal Behavior of PPC and OPC-53 When Exposed to Extreme Temperatures.** As the temperatures increase, the pores become broadly distributed across both the PPC and the OPC53 samples at all temperatures. Furthermore, the porosity of OPC-53 is higher than that of PPC. The distribution of smaller pores plays a crucial role in forming a network of cracks. Hence, we can conclude that the utilization of PPC under thermal loading is a good alternative to OPC-53.



**Construction waste in India: a structural equation model for identification of causes.** The construction industry is one of the bulk generators of waste globally. There is a wide range of factors that contribute to the generation of waste at construction sites. The significant factors are identified through exploratory factor analysis and a novel approach is presented for determining the causal relationships of various factors that lead to waste generation at construction sites by structural equation modelling.

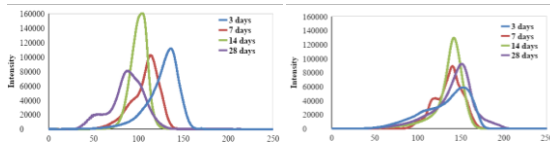


**Condition assessment of RC beams using artificial neural networks.** To assess the condition of structural components, a local damage index (LDI) was developed. Validation of FEM results with experimental results enables derivation of moment-curvature backbone curve for full-scale bridge girders, which enables further quantification of damage and residual moment capacity of full-scale bridges designed by Ministry of Road Transport and Highways (MoRTH). The correlation between the experiments, simulation and ANN predictions was found to be very satisfactory.

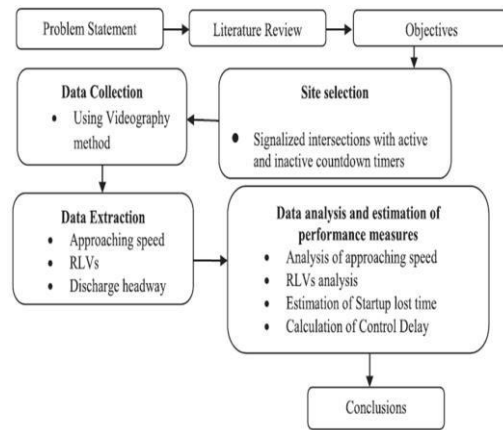


**Decision Support Tool for Blast Mitigation** In the current geopolitical scenario, it has become predominant for urban planners to consider terrorism threats in the built environment. Blast damage prediction is an essential requirement for emergency responders and law enforcement agencies. A standalone and straightforward MATLAB-based GIS tool for blast damage prediction has been developed, enabling planners to predict blast damage and initiate blast mitigation efforts such as access control, standoff, and hardening of critical infrastructure. Various blast scenarios such as man-portable packages and automobiles are considered, and modified air blast effects are superimposed over an urban environment.



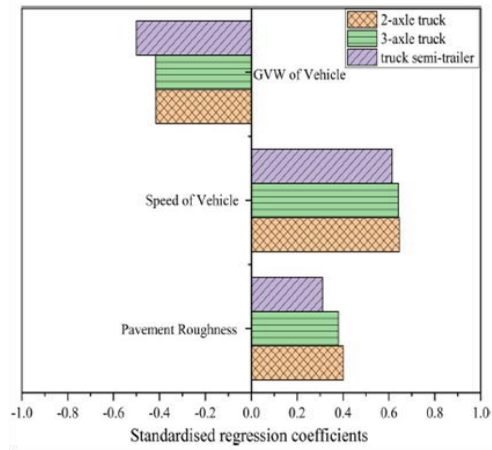
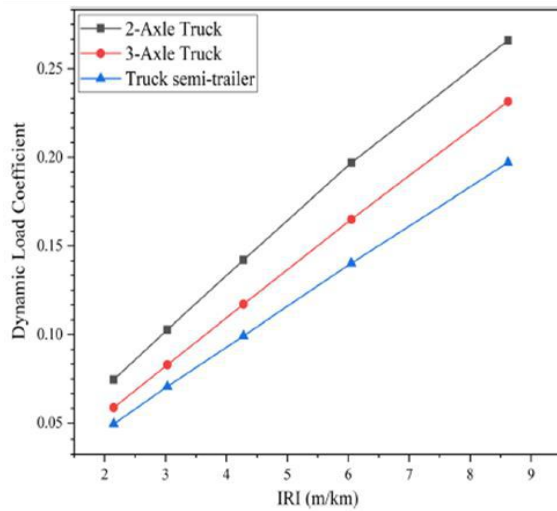


**Image-based deterioration assessment of concrete.** The present study attempts to quantify deterioration in concrete using digital image processing techniques. Concrete specimens were exposed to deterioration due to acid (HCl, H<sub>2</sub>SO<sub>4</sub>) chloride (NaCl) and sulphate (MgSO<sub>4</sub>) at 5% concentration for a period of 3, 7, 14 and 28 days. The mean grey scale intensities enable identification of exposure and deterioration due to different chemicals.



**Signalized intersections are the interrupted traffic flow facility in a roadway network.**

The present study evaluates the performance of traffic operations under with and without signal countdown timer (SCT) conditions based on field data collected at two signalized intersections in Hyderabad city, India. The vehicles speeding behavior and drivers complying with traffic regulation are also analyzed under different countdown timer conditions. It has been found that the average approaching speed of vehicles and red-light violations are found to be changed due to changes in the signal countdown timer conditions. The average startup loss time calculated in the field was found to be decreased when SCT was inactive. A significant increase in the capacity of signalized intersections has been observed when SCT was active. The traffic performance measures such as average control delay and queue lengths as estimated on the approaches were influenced due to the presence of STCs. The study finds that the signal countdown timer is an effective device that can enhance the traffic safety and operational performance of a signalized intersection.



**The magnitude of commercial vehicle wheel loads applied on the pavement plays a crucial role in pavement performance.** To avoid premature failure in the asphalt pavements, an insight into the factors influencing the magnitude of wheel loads is required. The objective of this study is to evaluate the influence of vehicle characteristics such as speed, magnitude of payload, and distribution of payload over the loading platform of a truck on the magnitude of dynamic wheel loads. For this purpose, commercial vehicle models were simulated using Truck-Maker software, and the magnitude of wheel loads generated was measured. Three vehicle classes consisting of different axle configurations were considered in this study, and their movement was simulated over the pavement profiles generated according to the guidelines of ISO 8608:2016. Dynamic wheel loads quantified in terms of dynamic load coefficient are found to be significantly affected by the above three parameters, and the effect of these three parameters is inseparable. Due to the effect of these parameters, the commercial vehicles operating under different conditions can produce dynamic loads, which are 4–60% higher than their static loads. The average load applied by the axles of a truck on the pavement is found to be sensitive to the distribution of payload over the loading platform of the truck. The trucks when loaded to the maximum legal load limit, and only when the load is located between one-third and two-third part of the loading platform, the average load applied by all the axles is found to be within the legal axle load limit.



## Summary

S.No.	Activity	Number
<b>1</b>	<b>Publications (Peer Reviewed Journals/ conferences)(SCOPUS/SCI)</b>	
	International Journals	<b>97</b>
	National Journals	<b>0</b>
	International Conferences	<b>13</b>
	National Conferences	<b>0</b>
<b>2</b>	<b>Funded Research Projects/SPARC projects (2020-21)</b>	<b>12</b>
	Completed Projects	2
	DBT, SERB, DRDO	Rs. 72 Lakhs
	Ongoing Projects (Rs <b>4.84</b> Crores)	<b>13</b>
	IMPRINT PROJECTS (1.33 Cr)	1
	FIST PROJECT (2.16 Cr)	1
	BRICS project (39 Lakhs)	1
	DST, SERB, IITM, NHA I, CSIR	10
<b>3</b>	<b>SPARC Project Workshops</b>	<b>0</b>
<b>4</b>	<b>Consultancy Works (April 2020-March 2021)</b>	<b>Rs. 1.336 Crores</b>
<b>5</b>	<b>Patents</b>	<b>5</b>
	Awarded	0
	Filed	5
<b>6</b>	<b>Books and Book Chapters</b>	<b>3</b>

	Books	1
	Book Chapters	2
<b>7</b>	<b>Conferences/ Workshops/GIAN courses/FDPs Conducted</b>	<b>51</b>
<b>8</b>	<b>Guest talks/ Webinars delivered Elsewhere</b>	<b>114</b>
<b>9</b>	<b>New Labs Established (Equipment/Software Procured)</b>	<b>Rs. 75.215 Lakhs</b>
<b>10</b>	<b>Awards/Recognitions/Achievements</b>	<b>6</b>
<b>11</b>	<b>Research Guidance (Completed in 2020-21) (146 ongoing)</b>	<b>9</b>
<b>12</b>	<b>International Visits of the Faculty Members/ students</b>	<b>1</b>
<b>13</b>	<b>Students Achievements</b>	
	Placements	<b>86</b>
	B.Tech	56
	MTech	30
	Higher Education (M.Tech, PhD at IITs & Abroad)	5 %
	Lab Development Activities	0
	Conference visits	0
<b>14</b>	<b>Civil Engineering Association Activities</b>	<b>25</b>
<b>15</b>	<b>Distinguished Guests visiting the Department/Delivering Expert Lecture/Keynote Address</b>	<b>11</b>
<b>16</b>	<b>Outreach Programmes</b>	<b>37</b>




# DEPARTMENT OF ELECTRICAL ENGINEERING

## Brief History of the Department, Academic Programs

The Department of Electrical Engineering is one of the oldest departments of National Institute of Technology (formerly Regional Engineering College), Warangal (NITW). Established as one of the major departments of the institute, since inception in 1959, the Department of Electrical Engineering has been actively engaged in teaching and research in diverse fields of Electrical Engineering. With excellent faculty, the department offers Undergraduate program (B.Tech) in Electrical and Electronics Engineering, Postgraduate degrees (M.Tech) in Power Electronics & Drives and Power Systems Engineering and Ph.D. programs in all the areas of electrical engineering. All the three programs have been accredited for full term of accreditation in three accreditations in 1987, 2004 and 2014-15 by NBA as per Washington Accord. Department is strong with all faculty members holding PhD degrees and having expertise in various fields. A new M.Tech. (Smart Electric Grid) was started in the academic year 2020-21. Currently there are 34 faculty, whose broad areas of expertise include State Estimation and Real Time Control of Power Systems, Applications of ANN and Fuzzy Logic in Power Systems, Power System Deregulation, Power System Transients, EMTD applications in Power Systems, Relay coordination, Application of Power Electronics for Power Quality Improvement and Industrial Drives, DSP controller Drives, Simulation of Power Electronic Converters and Drive systems and Control of Special Machines. The department has state of the art infrastructure in frontier areas of research in the domains of Power Systems and Power Electronics & Drives



## Faculty Details:




S. No.	Name of the Faculty Member and Designation	Highest Qualification	Research Interests	Photograph
1.	<b>Dr. M Sailaja Kumari Professor &amp; Head</b>	Ph. D	Power Markets, Renewable energy grid integration issues, AI techniques in Power engineering, Power system optimization.	
2.	<b>Dr. M Sydulu Professor (HAG)</b>	Ph. D	Real Time Control of Power Systems, Application ANN,GA and Fuzzy, Nature and Bio-inspired algorithms for Power system and Distribution Network optimisation Problems	
3.	<b>Dr. D M Vinod Kumar Professor (HAG)</b>	Ph. D	Artificial Intelligence Applications to Power System, Power System State Estimation in Distribution system and Transmission system, Power system Stability, Smart Grid Applications, Power system De-regulation, Power System Security, Machine Learning and Deep Learning Applications to Power System, Meter placement in Distribution System	
4.	<b>Dr. D V S S Siva Sarma Professor (HAG)</b>	Ph. D	Power systems, Signal Processing, Power Quality, Condition Monitoring, Smart Grid	

5.	<b>Dr. N Subrahmanyam Professor</b>	Ph. D	Power Systems, Distribution systems, Computer architectures	
6.	<b>Dr. B K Murthy Professor</b>	Ph. D	Wind and Wave Energy; Doubly fed Induction Machines, Electric drive.	
7.	<b>Dr. N Vishwanathan Professor</b>	Ph. D	LED Drivers, Induction Heating Applications, Switched Mode Power Converters	
8.	<b>Dr. V T Somasekhar Professor</b>	Ph. D	AC Drives, PWM Schemes, Renewable Systems	
9	<b>Dr. S Srinivasa Rao Professor</b>	Ph. D	Power Electronics, Electric Drives, Renewable Energy Systems	
10.	<b>Dr. N V Srikanth Associate Professor</b>	Ph. D	AI techniques application to power systems, HVDC and Intelligent controlled FACTS and heuristic and meta heuristic optimization techniques	





11	<b>Dr. ChVenkaiah Associate Professor</b>	Ph. D	Power Systems-AI Techniques, Deregulation, Restructuring; Financing, Power	
12.	<b>Dr. B L Narasimharaju Associate Professor</b>	Ph. D	LED Drivers for Lighting Systems; Power Converters & Control Techniques; Multilevel Power Converters; Grid Integration of Solar Energy; Switched Reluctance Motor drives	
13.	<b>Dr. S P Selvi Assistant Professor</b>	Ph. D	Power Electronics LED Lighting, Induction Heating, High Frequency Soft-Switched Inverters.	
14.	<b>Dr. P Suresh Babu Assistant Professor :</b>	Ph. D	Power System Protection: Digital Filtering Algorithms, Adaptive Protection Schemes, Relay Coordination, PMU & WAMS in Power System Protection,  Electric Vehicles	
15.	<b>Dr. A Kirubakaran Assistant Professor</b>	Ph. D	Power Electronics-DC-DC Converters, DC-AC Inverters, Multilevel Inverters, Power Quality and Grid interface, Renewable Energy and Distributed Generation.	

16.	<b>Dr. B Nagu</b> <b>Assistant</b> <b>Professor</b>	Ph. D	Renewable Energy, PV System, Fuel System, Micro Grid, Power System Stability and HVDC System.	
17.	<b>Dr. G Siva Kumar</b> <b>Assistant</b> <b>Professor</b>	Ph. D	Power Electronics Application to Power System and Renewable System.	
18.	<b>Dr. D Sreenivasarao</b> <b>Assistant</b> <b>Professor</b>	Ph. D	Power quality, Custom Power Devices (CPDs), Flexible AC Transmission System (FACTS), Multilevel inverters, Improved power quality converters.	
19.	<b>Dr. A V Giridhar</b> <b>Assistant</b> <b>Professor</b>	Ph. D	High Voltage Engineering, Condition Monitoring & Diagnosis of Power Equipments	
20.	<b>Dr. M Udaya Bhasker</b> <b>Assistant</b> <b>Professor</b>	Ph. D	Bi-directional DC-DC converters, Hybrid Energy storage system, Digital Control	
21.	<b>Dr. Y Chandrasekhar</b> <b>Assistant</b> <b>Professor</b>	Ph. D	Renewable energy resources in power systems; Microgrids; Multi-Microgrids; Optimization techniques, Meta-heuristic Techniques; Fast EV Charging stations; Blockchain Technologies to Smart Grid; Power system Reliability; Internet of	



			Things (IoT); PV Reconfiguration Techniques; Energy Management in Multi-Microgrids;	
22.	<b>Dr. T Vinay Kumar</b> <b>Assistant Professor</b>	Ph. D	Power Electronics and Drives	
23.	<b>Dr. P Srinivasan</b> <b>Assistant Professor</b>	Ph. D	Power Electronics and Drives	
24.	<b>Dr. Ch. Ramulu</b> <b>Assistant Professor</b>	Ph. D	Power Electronic Applications in Renewable Energy Systems, Maximum Power Point Tracking Techniques for Solar Photovoltaic Systems under various operating conditions including partially shading, Single-Stage Photovoltaic (PV) Source Fed Induction Motor Drive for Water Pumping Applications, Solar PV based High Gain Power Converters for stand-alone applications. LED Drivers for Energy Efficient Lighting System, PWM Techniques, Multilevel Inverter fed induction Motor Drives, and Electric Drives for EV applications etc.	

25.	<b>Dr. I Satish Kumar</b> <b>Assistant Professor</b>	Ph. D	AI applications to electrical power systems, Energy management, image and radar signal processing.	
26.	<b>Dr. Altaf Q H Badar</b> <b>Assistant Professor</b>	Ph. D	Artificial Intelligence Applications to Power Systems, Energy Management, Energy Trading, Forecasting	
27.	<b>Dr. D Swati</b> <b>Assistant Professor</b>	Ph. D	Linear Induction machines, Power converters, Five phase induction machines, DFIG	
28.	<b>Dr. Palash Mishra</b> <b>Asst. Professor</b>	Ph. D	High Voltage DC/AC Systems; Nano Dielectrics;	
29.	<b>Dr. Ram Krishan</b> <b>Asst. Professor</b>	Ph. D	Power system stability, Distribution system Analysis, Integration of Renewable energy resources	
30.	<b>Dr. Jeyasenthil R</b> <b>Asst. Professor</b>	Ph. D	Control System Design: Linear and Nonlinear Control, Quantitative Feedback Theory (QFT). Application areas, Control of Power electronic converters and Power system	

31.	<b>Dr. Deepak R Pullaguram</b> <b>Asst. Professor</b>	Ph. D	Renewable energy integration, AC and DC microgrid, power system stability	
32.	<b>Dr. Kanasottu Anil Naik</b> <b>Asst. Professor</b>	Ph. D	Wind energy system grid integration issues, Intelligent control techniques application in power system ,DSP techniques application in power system ,Micro-grid stability and control	
33.	<b>Dr. Debasmita Panda</b> <b>Asst. Professor</b>	Ph. D	Power Market Risk Management, Portfolio Optimization, Power Trading, Economic Dispatch, Congestion Management, Restructured Power Systems	
34.	<b>Dr. Mahamad Nabab Alam</b> <b>Asst. Professor</b>	Ph. D	Power systems protection and optimization, networked microgrids, renewable energy systems	

## Journal Publications

Hemasundara Rao Kolla, **N. Vishwanathan, Bhagwan K. Murthy**, Input voltage-controlled Full-bridge Series Resonant Converter for LED driver application, IET Power Electronics, 2021.

Patnana Hema Kumar, **V T Somasekhar**, A cost-effective and fault-tolerant brushless direct current drive with open-stator windings for low power electric vehicles, International Journal on Circuit Theory and Applications-Wiley 2021.

Sumon Dhara, **V T Somasekhar**, A Nine-Level Transformerless Boost Inverter with Leakage Current Reduction and Fractional Direct Power Transfer Capability for PV Applications, IEEE Journal of Emerging and Selected Topics in Power Electronics.

Suresh Lakhimsetty, Patnana Hema kumar, **V T Somasekhar**, Hybrid SVPWM strategies for a Four-level Open-End Winding Induction Motor Drive with an Improved Harmonic Performance and Balanced DC-link Capacitors, International Transactions on Electrical Energy Systems-Wiley.

Sumon Dhara, **V T Somasekhar**, A Three-Phase Semi-Single Stage PV Inverter with Voltage Boosting and Leakage Current Minimization, IEEE Transactions on Circuits and Systems II: Express Briefs .

Bhaskar S S Gupta Yelamurthy, **S Srinivasa Rao**, Experimental evaluation of direct torque-controlled 3-phase induction motor under inverter faults, International Journal of Electronics, 107 (2020) 5: 719-739 (Taylor and Francis).

Bhaskar S S Gupta Yelamurthy, **S Srinivasa Rao**, A Modified Inverter Topology for Fault-Tolerant DTC Induction Motor Drive, International Journal of Electronics, 107 (2020) 12: 1985-2005 (Taylor and Francis).

Bhaskar S S Gupta Yelamurthy, **S Srinivasa Rao**, Predictive Torque Control of Three-Phase Induction Motor Drive with Inverter Switch Fault-Tolerance Capabilities, IEEE Journal of Emerging and Selected Topics in Power Electronics, 2020. DOI: 10.1109/JESTPE.2020.3020328.

Vishnu Prasad M, Bonala AnilKumar, **S. Srinivasa Rao**, Grey Relational Analysis based objective Function Optimization for Predictive Torque Control of Induction Machine, IEEE Transactions on Industry Applications, Vol. 57, No. 1, Jan.-Feb. 2021.

Patil Mounica, **S. Srinivasa Rao**, Bipolar Bidirectional DC-DC Converter for Bi-polar DC Micro-grids with Energy Storage, Journal of Green Engineering (JGE) ,Vol. 11, No. 2, pp. 1060-1074, February 2021.

Patil Mounica, **S. Srinivasa Rao**, Bipolar Bidirectional DC-DC Converter for Bi-Polar DC Micro- grids with Energy Storage Systems, International Journal of Electronics (Taylor & Francis). Pub  
<https://doi.org/10.1080/00207217.2021.1914184>.

Chejarla, M.K.D., **Matam, S.K.**, Multiple Solutions for Optimal PMU Placement Using a Topology-Based Method, J. Inst. Eng. India Ser. B 102, 249-259 (2021).  
<https://doi.org/10.1007/s40031-020-00532-y>

Laxman bhukya, **Srikanth nandiraju**, A novel photovoltaic maximum power point tracking technique based on grasshopper optimized fuzzy logic approach, international journal of hydrogen energy, Elsevier Publishers Vol 45, Issue 16, 20 March 2020, Pages 9416-9427.

Laxman Bhukya, Anil Annamraju, **Nandiraju Srikanth**, Robust frequency control in a wind-diesel autonomous microgrid: A novel two-level control approach, Renewable Energy Focus, Vol. 36, pp. 21-30, 2021.

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### Funded Research Projects

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**Dr. I SATISH KUMAR**, Development of an efficient framework for optimal allocation of energy sources in a restructured distribution systems including DFACTS and PMU's, DST-SERB, EEQ/2016/000263, Rs. 19.8 Lakhs.

## On-going projects:

**PI: Dr. B.L Narasimharaju, Co-PIs: Prof. D. M Vinod Kumar, Prof. S. Srinivasa Rao, Dr. A.V. Giridhar,** Dr. V. V Mani; Research Collaborators: Dr. Akshay Kurmar Rathore, Concordia University, Canada, Dr. K. Vijay Babu, MIT Manipal. Industry Collaborators: Dr. D. Raveendhra, M/s Zunik Energies Pvt. Ltd., Sri. G. Veerananarayana, M/s. Ademtek: Design and Development of High Efficient Switched Reluctance Motor based Solar Photovoltaic (SPV) Water Pumping System (WPS), IMPRINT.IIC.1, MHRD-SERB, Lr. NO. IMP/2019/000295, Rs.79.8452 Lakhs Including Industry Contribution.

**PI: Dr. B.L Narasimharaju, Co-PIs: Dr. A.V. Giridhar, Dr. Ch. Ramulu,** Foreign Investigators : Prof. Subhashish Bhattacharya, NCS University, USA; Dr. Akshay Kurmar Rathore, Concordia University, Canada, Dr. Harsih Sarma Krishnamoorthy, University of Houston, USA: Design and Development of New High Gain Transformer-less Inverter Topology for PV Based Grid Tie Applications, MHRD-SPARC, SPARC/2018-2019/P1392/SL, Rs.68.99172 Lakhs; Host Institute: Rs.26.05; Total Budget Worth: Rs.95.04 Lakhs.

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**PI: Dr. Palash Mishra:** Design and development of silicone rubber nano-micro composites for outdoor insulation structure under harsh environments, SERB, SRG/2020/000826 dated 17.12.2020, Rs. 27.005 Lakhs.

**Dr. Ram Krishan (PI), Dr. Deepak Reddy. P(Co-PI),** Dr. Sanjaya K Panda (Co-PI) (CSE), Dr. Venkateswara Rao. K, (Co-PI) (CSE), Dynamic and Static Security Analysis of Large Power System using High-Performance Computing, DST-NSM India, DST/NSM/R&D\_HPC\_Applications/2021/03.31, dated 23.03.2021, Rs. 45.5816 Lakhs.

## Consultancy work details

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## Patents (Filed, Published, Granted and Licensed)

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## Books and Book Chapters

**Dr. Altaf Q. H. Badar**, Evolutionary Optimization Algorithms, CRC Press, 2021, ISBN 9780367750541 (First Edition).

## Conferences, workshops, FDPs, Webinars organized

Prof. Subhashish Bhattacharya, Foreign-PI; **B L Narasimharaju, Indian-PI; A. V Giridhar, Co-PI; Ch. Ramulu, Co-PI;** Five-Day Online INDO-US National SPARC Workshop on "Power Conversion Technologies for Renewable Energy and Micro-Grid Applications", March 02-06, 2021.

**Dr. B. Nagu, Dr. Deepak Reddy Pullaguram**, Organized a Five Day Faculty Development Program (FDP) on Operation and Control of Various Sources in Microgrid, July 20-24, 2020.

**Dr. G Siva Kumar, and Dr. D Sreenivasarao**, Organized a Six Day Faculty Development Program (FDP) on "Applications of Power Electronics to Renewable Energy sources and Power Quality Improvement Devices", January 04-09 2021.

**Dr. Y Chandrasekhar**, a program on "Future Skill Technologies-Internet of Things (IoT)", 16<sup>th</sup> September- 02<sup>nd</sup> October, 2020.

Dr. Hari Kumar Voruganti, MED, **Prof. M. Sailja Kumari, EED, Dr. Y. Chandrasekhar, EED**, Dr. R. Arockia Kumar, MME, Organized a Ten Day Faculty Development Program (FDP) on "Universal Human Values in the Context of Student Induction Program", November 02-11, 2020.

**Dr. Chandrasekhar Yammani, Dr. Altaf Q H Badar, Dr. P. Srinivasan, Prof. M. Sailja Kumari**, Organized a

Five Day Faculty Development Program (FDP) on "Effective Teaching and Learning of techniques for Monitoring, Protection and Control of Microgrids", February 18-22, 2021.

**Dr. T Vinay Kumar**, a program on "Fundamentals of Electrical Drive Controls and Implementation", March 05, 2021.

**Dr. P. Srinivasan, Dr. A. Kirubakaran, Prof. V.T. Somasekhar**, Organized a Six Day Faculty Development Program (FDP) on "Effective Teaching and Learning of Modern Electric Drives", March 15-20, 2021.

**Dr. P. Srinivasan, Dr. S.Porpandiselvi, Dr. N. Vishwanathan**, Organized a Six Day Faculty Development Program (FDP) on "Effective Teaching and Learning of Power Converters for Electric Vehicles", March 01-06 2021.

**Dr. D. Swati, Dr. S.Porpandiselvi, Dr. N. Vishwanathan**, Organized a Six Day Faculty Development Program (FDP) on "Teaching and Learning of Power Converters and Control Techniques for Renewable Energy Systems", March 08-13 2021.

**Dr. Jeyasenthil, B L Narasimharaju, Prof. M Sailja Kumari**, Organized a Seven Day Faculty Development Program (FDP) on Teaching and Learning of Advanced Control Systems, August 10-16, 2020.

**Dr. Deepak Reddy Pullaguram, Dr. B. Nagu**, Organized a Six Day Faculty Development Program (FDP) on Design, Modeling and Control of Renewable Energy Resources, September 07- 12, 2020.

**Dr. Debasmita Panda, Dr. Altaf Badar, Dr. Chandrasekhar Yammani , Prof. M. Sailja Kumari**, Organized a Five Day Faculty Development Program (FDP) on 'Smart Grid Markets\_Key Trends, Challenges and Opportunities', July 27-31,2021.

## Guest Talks/webinars delivered

**Prof. Sydulu Maheswarapu**, delivered lecture on, "locational marginal prices and financial transmissions right of deregulated power system", AICTE Sponsored Online SIX

DAY STTP ON "Renewable Energy Development in Deregulated Power Market: Future Scenario " Jayamukhi Institute of Technological Sciences, Narsampet, Warangal(R), 14-10-2020,

**Prof. Sydulu Maheswarapu**, delivered lecture on, "1. Basics of control: open loop-closed loop, Transfer functions, and Control laws 2. PID controls and applications in Robotics or engineering", Mechanical Engg Department-NITW-A Ten Day Online Student Training Programme on Future Skill Technologies "Robotics & Automation, 12-10-2020.

**Prof. Sydulu Maheswarapu**, delivered lecture on, Artificial Intelligence and Optimization technique applications, Vidya Jyothi Institute of Technology (Autonomous), Hyderabad is organizing an AICTE sponsored STTP (Phase-II) on Hands on training in Artificial Intelligence and Optimization technique applications for additional lab experiments and mini, major projects for B. Tech Engineering students from 07-12-2020 to 12-12-2020, 9-12-2020.

**Prof. Sydulu Maheswarapu**, delivered lecture on, "Key note speaker-Modern Power system –Challenges", Sree Vidyanikethan Engineering College, Tirupati is going to organize an International E-Conference on Energy, Control, Computing and Electronics Systems (E-ICECCES) on 27 - 29 November, 2020, 27-11-2020.

**Prof. Sydulu Maheswarapu**, delivered lecture on, "Future Perspective of Electrical & Electronics Engineering", Future Perspective in Electrical & Electronics Engineering – RGUKT-Srikakulam campus-AP-21-12-2020, 21-12-2020.

**Prof. Sydulu Maheswarapu**, delivered lecture on, "AI Applications to Smart Grid", AICTE Sponsored One Week National Level Online Short Term Training Program (STTP) On "RECENT TRENDS AND CHALLENGES IN POWER MARKET WITH SMART GRID TECHNOLOGY" scheduled from

28/12/2020 to 2/1/2021 (Phase-II). V R Siddhartha Engineering College -Vijayawada-520007 Andhra Pradesh, India, 28-12-2020.

**Prof. Sydulu Maheswarapu**, delivered lecture on, "AI Applications in Power Systems", Dept. Saranathan College of Engineering. An AICTE Sponsored Two week Faculty Development Programme (FDP) on Electrical Paradigm Shift to Cyber Physical Systems and Contemporary Research in Electrical and Electronics Engineering from 03.05.2021 to 15.05.2021, 10-5-21.

**Prof. V T Somasekhar**, delivered lecture on "Open-end winding Induction Motor Drives" CBIT, Hyderabad, 5th November 2020.

**Prof. V T Somasekhar**, delivered lecture on "Introduction to Open-end Winding Induction Motor Drives", Gudlavalleru Engineering College, Krishna Dt, Andhra Pradesh, 18th March 2021.

**Prof. V T Somasekhar**, delivered lecture on "Open-end winding Induction Motor Drives" G H Rasoni Group of Institutes, Pune, Nagpur and Jalgaon, 2nd June 2020.

**Prof. N. Vishwanathan**, delivered lecture on High Gain Converters, College of Engineering, Pune, 24.09.20

**Prof. N. Vishwanathan**, delivered lecture on Electrical Power Control, Vasavi College of Engineering, Hyderabad, 16.09.20.

**Prof. N. Vishwanathan**, delivered lecture on Modelling of DC-DC Converters, Pragati Engineering College, 30.11.20

**Prof. N. Vishwanathan**, delivered lecture on High Gain Converters, Pragati Engineering College, 2.12.20.

**Prof. N. Vishwanathan**, delivered lecture on Current mode control, PVP Sidhartha Engg. College, 9.12.20

**Prof. N. Vishwanathan**, delivered lecture on Modelling of DC-DC Converters, KITS Warangal, 15.12.20



**Prof. N. Vishwanathan**, delivered lecture on Modelling of DC-DC Converters, NIT Warangal, 5.1.21.

**Prof. M.Sailaja Kumari**, delivered lecture on Transmission Congestion Management, "Renewable Energy Development in Deregulated Power Market: Future Scenario", 12-17th October 2020 organized by Jayamukhi Institute of Technological sciences, Warangal, 12th October 2020.

**Prof. M.Sailaja Kumari**, delivered lecture on "Violence - a Universal challenge" 'ALL India women's conference on International day for elimination of violence on women' held on 22 November 2020. 22 November 2020.

**Prof. M.Sailaja Kumari**, delivered lecture on 'Universal Human Values' TLC workshop on "Teaching and Learning of Advances in Manufacturing Technologies" 30th November - 4th December 2020 organized by Dept. of Mechanical Engineering, NIT-Warangal, 4th December 2020.

**Prof. M.Sailaja Kumari**, delivered lecture on 'Universal Human Values' TLC workshop on "Teaching and Learning Strategies of Differential Equations and Applications in Science and Engineering" 28th December 2020 - 1st January, 2021 organized by Department of Mathematics, NIT Warangal, 28th December 2020.

**Prof. M.Sailaja Kumari**, delivered lecture on "Role of Market, consumers and Utilities in Smart Grid", "Introduction to Smart Grid (ITSG)- (Phase I)" by KDK college of Engineering, Nagpur sponsored by AICTE, New Delhi, 23rd Nov. 2020 to 5th Dec. 2020, 30th November 2020.

**Prof. M.Sailaja Kumari**, delivered lecture on " Role of Market, consumers and Utilities in Smart Grid" , Introduction to Smart Grid (ITSG)- (Phase II)" by KDK college of Engineering, Nagpur Sponsored by AICTE, New Delhi, 7th to 18th Dec. 2020, 18th December 2020.

**Prof. M.Sailaja Kumari**, delivered lecture on 'Universal Human Values' TLC workshop on "Effective Teaching and Learning of Techniques for Monitoring, Protection and Control of Micro grids" 18th - 22nd February, 2021, 21 Feb 2021.

**Prof. M.Sailaja Kumari**, delivered lecture on "Universal Human Values", TLC workshop on "Effective Teaching and Learning of Power Converters for Electric Vehicles" during March 1st - 6th, 2021; 3rd March 2021.

**Prof. M.Sailaja Kumari**, delivered lecture on 'Universal Human Values' TLC workshop on Teaching and Learning of Power Converters and Control Techniques for Renewable Energy Systems during 8-13 March'2021, 9th march 2021.

**Prof. M.Sailaja Kumari**, delivered lecture on "Wind speed forecasting using ANN", TLC workshop on Teaching and Learning of Power Converters and Control Techniques for Renewable Energy Systems during 8-13 March'2021, 12 March 2021,

**Dr. B L Narasimharaju**, delivered lecture on "Power Conditioning & Management Systems in Electric Vehicle", One day webinar on 'Advances in Automobile Engineering', under AICTE Margadarshan, organised by Department of Mechanical Engineering, V.R.Siddhartha Engineering College, Vijayawada, AP. wednesday, April 28<sup>th</sup>, 2021.

**Dr. B L Narasimharaju**, delivered lecture on "Power Converters and Control in Smart Power Systems", Five Day Online, FDP on "Challenges and Opportunities in smart grid" organized by the department of EEE, M S Ramaiah Institute of Technology, Bangalore, India, in association with IEEE PES Bangalore chapter. 20-July to 24 -July 2020.

**Dr. B L Narasimharaju**, delivered lecture on "Power Converters and Control Techniques for Power Management System in Electric Vehicles", AICTE Training and Learning (ATAL)Academy Sponsored One-week Faculty Development Programme on

APPLICATION OF POWER ELECTRONICS IN SMART GRID AND ELECTRIC VEHICLE (APESGEV - 2020), Department of Electrical and Electronics Engineering, Nalla MallaReddy Engineering College, Hyderabad 29<sup>th</sup> August, 2020.

**Dr. B L Narasimharaju**, delivered lecture on "Power Management Systems in Electric Vehicles: Power Converters & Control Techniques", TEQIP-III Sponsored, Five Day online FDP on " Power Electronic Applications in Electric Vehicles and Energy Storage " scheduled from 25-29 January 2021., NIT Surathkal, Karnataka.

**Dr. B L Narasimharaju**, delivered lecture on "Power Converters and Control Techniques for Power Management System in Electric Vehicles", AICTE sponsored Online Short Term training Programme(STTP) on "Recent Trends on Hybrid and Electric Vehicle Technologies" during 6<sup>th</sup> -11<sup>th</sup> of July 2020 under the auspices of Mechanical Engineering Department, MVGR College of Engineering, Vizianagaram, Andhra Pradesh, India.

**Dr. A. Kirubakaran**, delivered lecture on "Integration of Renewable Energy Sources", RAISONI GROUP OF INSTITUTIONS, Nagpur, 08<sup>th</sup> June, 2020.

**Dr. G Siva Kumar**, delivered lecture on "Energy Management control by Grid-Connected Inverter of Solar PV and BES System", AICTE Training and Learning (ATAL) Sponsored Online Faculty Development Programme on "Energy Storage" by Indian Institute of Information Technology, Design and Manufacturing (IIITDM), Kancheepuram. October 27-31, 2020.

**Dr. A.V. Giridhar**, delivered lecture on "Condition Monitoring and Testing of Electrical Equipment" Electrical Engineering Dept., G H Raison Institute Engg. & Tech. , Pune in association with IETE and ISTE chapter, 27-08-2020.

**Dr. A.V. Giridhar**, delivered lecture on, "Pulsed power technology & its emerging applications", AICTE Sponsored Two Week

Online Faculty Development Program of Phase-II during 23/11/2020 to 5/12/2020 on "Advanced Power Electronic Applications in Power Systems (APEAPS-2020)", Sasi Institute Tech & Engg., Tadepalligudem, Andhra Pradesh, 25/11/2020.

**Dr. A.V. Giridhar**, delivered lecture on, "Recent trends in condition monitoring & diagnostics of electrical power equipments", AICTE Sponsored Two Week Online Faculty Development Program of Phase-II during 23/11/2020 to 5/12/2020 on "Advanced Power Electronic Applications in Power Systems (APEAPS-2020)", Sasi Institute Tech & Engg., Tadepalligudem, Andhra Pradesh, 01-12-2020.

**Dr Chandrasekhar Y**, delivered lecture on "Electric vehicle charging stations and its effect on microgrids", KL Univer-E&ICT- -21-6-2021.

**Dr Chandrasekhar Y**, delivered lecture on "electric vehicle charging stations and its effect on microgrids", Saranathan College of Engineering, 13-5-2021.

**Dr Chandrasekhar Y**, delivered lecture on "Electric vehicle charging stations and its effect on microgrids", VJIT, HYd, 8-12-2020.

**Dr Chandrasekhar Y**, delivered lecture on "Electric vehicle charging stations and its effect on microgrids", Matrusri engg college, 28-4-2021.

**Dr Chandrasekhar Y**, delivered lecture on "COLLABORATIVE DEMAND RESPONSE IN SMART Grid", annamacharya institute of technology, 4-3-2021.

**Dr Chandrasekhar Y**, delivered lecture on "COLLABORATIVE DEMAND RESPONSE IN SMART Grid", VJIT, HYd, 8-12-2020.

**Dr Chandrasekhar Y**, delivered lecture on "Optimal dispatch of EV vehicle to grid (VG2) battery storage using p-electre method", Pragathi engg college, 4-12-2020.

**Dr Chandrasekhar Y**, delivered lecture on "COLLABORATIVE DEMAND RESPONSE IN SMART Grid", kits Warangal, 4-11-2020.

**Dr Chandrasekhar Y**, delivered lecture on "Research aspects of Electric vehicle charging stations and its effect on distribution systems", QIS College of Engg, Ongole, 27-11-2020.

**Dr. Ch.Ramulu**, delivered lecture in Five-Day Online Faculty Development Program on "Recent Advances in Electrical Energy Management, Control and Automation", Department OF Electrical and Electronics Engineering, LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS) MYLAVARAM – 521 230, 8th – 12th June, 2021.

**Dr. Ch. Ramulu**, delivered lecture in AICTE SPONSORED TWO WEEKS ONLINE FACULTY DEVELOPMENT PROGRAMME (FDP) ON Trends and Challenges in Power Converters and Control" Slot-II, DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING, COLLEGE OF ENGINEERING GUINDY ANNAUNIVERSITY, CHENNAI-600025. 4th – 18th May, 2021.

**Dr. Ch. Ramulu**, delivered lecture in AICTE SPONSORED TWO WEEKS ONLINE FACULTY DEVELOPMENT PROGRAMME (FDP) ON Trends and Challenges in Power Converters and Control " Slot-I, DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING, COLLEGE OF ENGINEERING GUINDY ANNA UNIVERSITY, CHENNAI-600025. 9th – 23rd May, 2021.

**Dr. Ch. Ramulu**, delivered lecture in One Week Online Faculty Development Programme On Real Time Aspects of Power System Scenario, MAHATMA GANDHI INSTITUTE OF TECHNOLOGY - [MGIT], HYDERABAD, TELANGANA, 6th to 10th July 2020.

**Dr. Ch. Ramulu**, delivered lecture in AICTE Sponsored STTP-3 on Battery Management and Control Techniques in evs", S J P N Trust's

Hirasugar Institute of Technology, Nidasoshi, 14th to 19th December 2020.

**Dr. Ch. Ramulu**, delivered lecture in AICTE Sponsored STTP-1 on Battery Management and Control Techniques in evs, S J P N Trust's Hirasugar Institute of Technology, Nidasoshi, 23rd to 28th November 2020.

**Dr. Ch. Ramulu**, delivered lecture in AICTE Training and Learning (ATAL) Academy Sponsored One-week Faculty Development Programme on APPLICATION OF POWER ELECTRONICS IN SMART GRID AND ELECTRIC VEHICLE (APESGEV - 2020). Department of Electrical and Electronics Engineering, Nalla Malla Reddy Engineering College, Hyderabad. August 25-29, 2020.

**Dr. Altaf Q. H. Badar**, delivered lecture on "Optimization Techniques in Power Systems", SJCE, Chennai (Online), July 23, 2020.

**Dr. Altaf Q. H. Badar**, delivered lecture on "Smart Home Energy Management Systems", NIT Silchar (Online), September 9, 2020.

**Dr. Altaf Q. H. Badar**, delivered lecture on "Smart Home Energy Management Systems", KLNCOE, Pottapalayam (Online), December 07, 2020.

**Dr. Altaf Q. H. Badar**, delivered lecture on "Different NBA Criteria", ACET, Nagpur (Online), February 02, 2021.

**Dr. Swati Devabhaktuni**, delivered lecture on AI techniques in power electronics, Vidya Jyothi Institute of Technology, Hyderabad, 09.11.2020.

**Dr. Deepak Reddy Pullaguram**, delivered lecture on "Recent trends in Microgrid technologies" FDP Workshop, organized by Electrical Department, Vignan's institute of technology and science, 6 to 11 July 2020.

**Dr. Deepak Reddy Pullaguram**, delivered lecture on "Peer to Peer Communication applications in Microgrid systems", AICTE Sponsored - Six-Days Online Short Term Training Programme on "Power Utilities and

Artificial Intelligence - Leveraging the Data" by the Department of Electrical & Electronics Engineering, CMR Institute of Technology, Bengaluru- 560 037, 23/11/2020, 11/12/2020, 18/12/2020.

**Dr. Deepak Reddy Pullaguram**, delivered lecture on "Renewable energy integration into microgrids" Faculty Development Program (FDP) on "Renewable Energy Conversion & Management organized by Department of Electrical Engineering MGM's POLYTECHNIC AURANGABAD, 29/01/2021.

**Dr. Deepak Reddy Pullaguram**, delivered lecture on "Fractional order based voltage control design for Voltage source converters in autonomous Microgrid", One Week AICTE sponsored Short Term Training Programme on "Fractional Order Robust Control System Design (Series-II) from 23rd - 28th November, 2020, organized by Department of Electrical and Electronics Engineering, Vardhaman College of Engineering, Hyderabad, 27/11/2020

**Dr. Deepak Reddy Pullaguram**, delivered lecture on "Distributed Control based Microgrid Operation", Research Trends in Renewable Photovoltaic systems and its research Challenge from 19 to 24 Oct, 2020, organized by Department of Electrical and Electronics Engineering SVCE, Tirupati, **21/10/2020**.

**Dr. K. Anil Naik**, delivered lecture on "Wind Energy Grid Integration Challenges and Prospective Solutions", Arya college of Engineering and I.T, Jaipur, INDIA, 28th November, 2020

**Dr. K. Anil Naik**, delivered lecture on "Wind Energy Conversion systems issues and Prospective Solutions", MGM's Polytechnic, Aurangabad, INDIA, 27th, January, 2021.

**Dr. K. Anil Naik**, delivered lecture on "Controller Design and Application to Wind Energy Systems", Vardhaman College of Engineering, Hyderabad, INDIA, 20th March, 2021.

**Dr. K. Anil Naik**, delivered lecture on "AI Applications", in Electrical Engineering, SARANATHAN COLLEGE OF ENGINEERING, Edamalaipatti Pudur, Tamil Nadu, 8th May, 2021.

**Dr. K. Anil Naik**, delivered lecture on "Communication Networks for SMART GRID", KL University, Andhra Pradesh, 16th June, 2021.

**Dr. R. Jeyasenthil**, delivered lecture on "Quantitative Feedback Theory", TEQIP sponsored Faculty Development Program (FDP) on " Robust Control Systems" from 24/04/2021 to 01/05/2021, Organized by the Department of Electrical & Electronics Engineering, Government Engineering College (GEC), Barton Hill, Thiruvananthapuram, Kerala, 01-05-2021.

**Dr. Debasmita Panda** delivered lecture on 'Restructured Electricity Market', College of Engineering Pune, August 2021

**Dr. Debasmita Panda** delivered lecture on 'Transactive Energy Market', College of Engineering Pune, August 2021

### **Awards/ Recognitions/ Achievements**

"Active and Reactive Power Control of Grid Tied Asymmetrical MLI based PV System with Reduced Switching Frequency", by Hareesh Myneni, A Pranay Kumar, Somnath A. Mandale, and **G. Siva Kumar**, has been awarded as a Best Paper in the session and the track of the 2nd Electric Power and Renewable Energy Conference (EPREC-2021), 28th-30th May 2021, organized by the Department of Electrical Engineering, NIT Jamshedpur, and Proceedings Publish in Springer.

### **PhD Research guidance (Completed during the academic year)**

**Punna Srinivas** completed his Ph. D with title "Design, analysis and implementation of Bi-directional Dc-DC Converter for HESS in DC-

microgrid applications”, under the guidance of Dr. Udaya Bhasker Manthathi.

**T. Abhilash** completed his Ph. D with title “Performance Evaluation of Hybrid Multilevel Inverter Topologies for Medium Voltage Applications”, under the guidance of Dr. A.Kirubakaran, Prof. V.T.Somasekhar.

**K. Sateesh Kumar** completed his Ph. D with title “Investigation on Single-Phase Voltage Source based Inverter Topologies for Grid-Connected Photovoltaic Power Generation systems”, under the guidance of Dr. A.Kirubakaran, Prof. N. Subrahmanyam.

**V K Satyakar Veeramallu** completed his Ph. D with title “Development of Soft-switched LED Drivers for Off-Grid Lighting Applications”, under the guidance of Dr. S. Porpandielvi, Dr. B L Narasimharaju.

**A. Pranay Kumar** completed his Ph. D with title “Investigations on Topologies and Control Algorithms of DSTATCOM to Compensate Current Related Power Quality Issues”, under the guidance of Dr. G Siva Kumar, Dr. D Sreenivasarao.

**Dileep Krishna Mathi** completed his Ph. D with title “Investigations on Maximum Power Point Tracking Techniques for Solar Photovoltaic Systems under Partially Shaded Conditions”, under the guidance of Dr.Ch .Ramulu.

**K. M. Ravi Eswar** completed his Ph. D with title “Modified Direct Torque and Predictive Torque Control Strategies for Induction Motor Drive”, under the guidance of Dr T Vinay Kumar.

**Bhaskar S S Gupta Yelamarthy** completed his Ph. D with title “Investigation on Fault-Tolerant Converter Topologies for Three Phase Induction Motor Drive System”, under the guidance of Dr. S. Srinivasa Rao.

**B.Kiran Babu** completed his Ph. D with title “Analytical and Meta-Heuristic methods for Multi-objective Optimal DG deployment in Distribution Networks under normal and uncertainty conditions”, under the guidance of Prof. Sydulu maheswarapu

**A. Anil Kumar** completed his Ph. D with title “Investigations on load frequency control of

microgrid and interconnected power systems using artificial intelligent Techniques”, under the guidance of Dr. N. V. Srikanth.

**B. Gurappa** completed his Ph. D with title “Optimal Planning of Electric Vehicle Fast Charging Stations and Distributed Generators in Distribution System”, under the guidance of Dr.Chandrasekhar, Prof. M.Sydulu..

**C. Srinivasaratnam** completed his Ph. D with title “Optimal Scheduling of Micro-Sources and Load Frequency Control in Multi-Microgrid System using Meta-Heuristic Techniques”, under the guidance of Dr.Chandrasekhar, Prof. M.Sydulu.

### Department Outreach Activities

- **Prof. Sydulu Maheswarapu** is acted as a BOG member, Vaagdevi College of Engineering-Warangal (AY: 2020-2021).
- **Prof. Sydulu Maheswarapu** is acted as a BoG member, NIT Warangal (AY: 2020-2021).
- **Prof. Sydulu Maheswarapu** is acted as a BOS member, PVP Siddhartha Institute of Technology, Vijayawada-A P (AY: 2020-2021).
- **Prof. Sydulu Maheswarapu** is acted as a BOS member, Sri Vasavi Engineering College, Tadepalligudem, A P (AY: 2020-2021).
- **Prof. Sydulu Maheswarapu** is acted as a BOS member, SKU College of Engineering and Technology-Ananthapuram-A P (AY: 2020-2021).
- **Prof. Sydulu Maheswarapu** is acted as a BOS member, RGKUT Sreekakulam, AP (AY: 2020-2021).
- **Prof. Sydulu Maheswarapu** is acted as a BOS member, Chadalawada Ramanamma College of Engineering, Tirupathi, AP (AY: 2020-2021).
- **Prof. V T Somasekhar** is acted as a BoS member, Gudlavalleru Engineering College, Krishna (AY: 2020-2021).
- **Prof. V T Somasekhar** is acted as a BoS member, Vignan University, Guntur (AY: 2020-2021).
- **Prof. V T Somasekhar** is acted as BoS member, KITS Warangal (AY: 2020-2021).
- **Prof. V T Somasekhar** is acted as BoS member, CBIT, Hyderabad (AY: 2020-2021).

- **Prof. M.Sailaja Kumari** is acted as a BOS member, KITS Warangal (AY: 2020-2021).
- **Prof. M.Sailaja Kumari** is acted as a BoS member RVRJC college of Engineering, Guntur (AY: 2020-2021).
- **Dr. B L Narasimharaju** is acting Member, Governing Body Council, Vignan Institute of Technology and Science, Vignan Group of Institutions, Telangana, Since January 2020.
- **Dr. B L Narasimharaju** is acting as a Editorial Board Member, International Journal of Advances in Applied Sciences, from 01-December-2020 up to 31-Jan-2023. (3 Years Duration)
- **Dr. B L Narasimharaju** is acting as Editorial Board Member, INTERNATIONAL REFEREED JOURNAL OF ENGINEERING SCIENCE AND TECHNOLOGY (IRJEST), from 04-March-2021 to Till Date.
- **Dr. B L Narasimharaju** is acting as Member, Doctoral Advisory Committee, MIT Manipal, Manipal University, from 2017 to till Date
- **Dr. B L Narasimharaju** is acted as a Selection committee Member, recruiting faculty for Electrical and Electronics Engineering department, on 29.01.2021 (Friday), at Balaji Institute of Technology & Science, Laknepally (Village), Narsampet(M), Warangal District.
- **Dr. B L Narasimharaju** is acted as an Advisor, Zunik Energies Pvt. Ltd, Start-Up company, IIT Roorkee, from September 2017 onwards.
- **Dr. B L Narasimharaju** is acted as an External Examiner, Viva Voce Examination of PhD, Department of Electrical Engineering, Department of Electrical and Electronics Engineering, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, 12-May-2021
- **Dr. B L Narasimharaju** is acted as an External Examiner, Viva Voce Examination of PhD, Department of Electrical and Electronics Engineering, Anna University, Chennai, Tamil Nadu, 18-June-2020.
- **Dr. G Siva Kumar** is acting as a Editorial Board Member for Global Journal of Energy Technology Research Updates in the field of Energy Research from March 2021.
- **Dr. G Siva Kumar** is acted as a BOS member BOS Member - VNR Vignana Jyothi Institute of Engineering and Technology, Hyderabad (AY: 2020-2021).
- **Dr. G Siva Kumar** is acted as a BOS Member - Institute of Aeronautical Engineering, Hyderabad, Hyderabad (AY: 2020-2021).
- **Dr. G Siva Kumar** is acted as a BOS Member - Bonam Venkata Chalamawa Engineering College, Odalarevu, East Godavari (AY: 2020-2021).
- **Dr. G Siva Kumar** is acted as a BOS Member - University College of Engineering (Kakatiya University), Kothagudem (AY: 2020-2021).
- **Dr. G Siva Kumar** is acted as a BOS Member - University College of Engineering (Kakatiya University), Kothagudem (AY: 2020-2021).
- **Dr. A.V. Giridhar** is acted as a BOS Member, Vardhaman College of Engineering, Shamshabad, Hyderabad (AY: 2020-2021).
- **Dr Chandrasekhar Y** is acted as a BoS Member, Amrita Sai Institute of Science and Technology, Paritala, Krishna (AY: 2020-2021).
- **Dr Chandrasekhar Y** is acted as a QIS College of Engineering & Technology, Ongole (AY: 2020-2021).

## Electrical Engineering Association (EEA) 2020-21 Activities

**Faculty incharge:** Dr. Ch. Ramulu

**Treasurer:** Dr. G. Siva Kumar

**General Secretary:** Rayadurgam Sneha Sastry

- The pandemic caused a lot of confusion and chaos around the world. Taking up the challenge of a virtual year and keeping up the legacy is a task that **the Electrical Engineering Association** has, was a task the team took upon itself. Right from finding the right platform to a right mix of events that would encourage not just students to connect, network and learn but also reduce the distance between them without compromising on the social distancing, we had made a lot of plans, back-up plans and their back-ups as well because of the uncertainty that had become a part of the air and day.

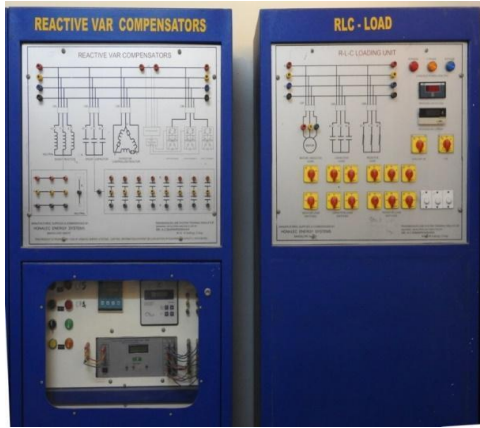


- A huge portion of the events conducted were based on live talks with the alumni and guests who have been working on real time problems and challenges that the students will be in turn facing once they graduate from the college.
- All the activities and events conducted by the team in the academic year 2020-2021.

S.No.	Events
1	FLASH 2.0
2	Know your branch
<b>Live, Interactive, Career &amp; Mentorship events</b>	
3	Alumni Connect – Software
4	Alumni Connect – Hardware
5	Alumni Connect – Management
6	UPSC Decoded
7	After M.Tech
8	All About AI
9	Off Campus Placement
10	Off Campus Internship
11	Guide to GATE
12	Placement Talk
13	Internship Talk
14	Internship Decrypted
15	Exploring with the Panda Explores
16	Candid Talk with team Tejas
17	Mentorship
18	Acquaintance
<b>Electrical Engineering Industry Expert Lectures</b>	
19	Technology Absorption in Indian Railways
20	Electrical Grid Technology Aspects: From Generation to Utilization Power System Grid Operations under Severe Weather Conditions
21	Advances in Smart Grid & Roadmap to Achieve it
<b>Workshops, Magazines, Podcasts and Experience Series</b>	
22	Cloud Workshop
23	GIT Workshop
24	Resume Building Workshop
25	Placement Experience Series
26	Internship Experience Series
27	GATE Experience Series
28	URA Podcast
29	Perspicacity
<b>Quizzes, Tests and Competitions</b>	
30	Coding Competition
31	Circuit Debugging
32	Code Debugging
33	Mock GATE
34	Mock Software OT
35	Mock Core OT
36	FLASH Quiz
37	Tech Quiz
38	General Quiz
39	Christmas Quiz

Connect and Network	
40	mEEEmify
41	Relay
42	Game A Thon

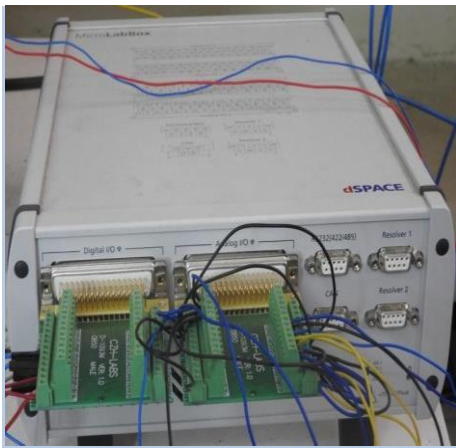
### Any other Department Specific



Transmission Line Model



Comprehensive AC Drive



DSPACE MicroLab Box



Hardware In-loop System

## Summary

S.No.	Activity	Number
<b>1</b>	<b>Publications (Peer Reviewed Journals/ conferences)(SCOPUS/SCI)</b>	
	International Journals	71
	International Conferences	15
<b>2</b>	<b>Funded Research Projects/SPARC projects (2019-20)</b>	
	Completed Projects	4
	Ongoing Projects (Rs. 4.05 Crores)	10
	IMPRINT PROJECT (Rs. 79.85 Lakhs)	1
	CPRI (Rs. 14.28 Lakhs)	1
	SPARC (Rs. 95.04 Lakhs)	1
	DST, DST-NSM (Rs.21.56 Crore)	7
<b>3</b>	<b>SPARC Project Workshops</b>	<b>1</b>
<b>4</b>	<b>Consultancy Works (2019-20)</b>	<b>Rs. 6.49 Lakhs</b>
<b>5</b>	<b>Patents</b>	<b>1</b>
	Awarded	0
	Filed	1
<b>6</b>	<b>Books and Book Chapters</b>	<b>1</b>
	Books	1
	Book Chapters	0
<b>7</b>	<b>Conferences/ Workshops/GIAN courses/FDPs Conducted</b>	<b>13</b>

<b>8</b>	<b>Guest talks/ Webinars delivered</b>	<b>71</b>
<b>9</b>	<b>Awards/Recognitions/Achievements</b>	<b>1</b>
<b>10</b>	<b>Research Guidance (Completed in 2019-20)</b>	<b>12</b>
<b>11</b>	<b>Students Achievements</b>	
	Placements	
	B.Tech	<b>68 %</b>
	MTech	<b>32.19 %</b>
<b>12</b>	<b>Electrical Engineering Association Activities</b>	<b>42</b>
<b>13</b>	<b>Distinguished Guests visiting the Department/Delivering Expert Lecture/Keynote Address</b>	<b>3</b>
<b>14</b>	<b>Outreach Programmes</b>	<b>37</b>

# DEPARTMENT OF MECHANICAL ENGINEERING

## Brief History of the Department, Academic Programs

*The Department of Mechanical Engineering was established in the year 1959. The department presently offers one Under Graduate Programme, i.e., B.Tech in Mechanical Engineering with an intake of around 170 students, seven M.Tech programs - Thermal Engineering, Manufacturing Engineering, Computer Integrated Manufacturing, Machine Design, Automobile Engineering, Materials and Systems Engineering Design, Additive Manufacturing – one P.G Diploma in Additive Manufacturing and Ph.D programs. At present, the Department has 48 faculty members with research expertise in different specializations of Mechanical Engineering. The Department has good research facilities for both experimental as well as simulation-based research. The department has liaison with reputed industries and R&D organizations such as NFTDC, DMRL, DRDL, ARCI, BHEL, CMTI, CPRI etc. All the faculty of the department are actively engaged in R&D and Consultancy. Presently the department is handling about 25 funded projects worth Rs. 3.00 Crores. The department has recently acquired a metal 3D printer at a cost of Rs.1.4 Crores under TEQIP -III grants. The institute is establishing SIEMENS Centre of Excellence in digital manufacturing and Industry 4.0 in manufacturing in which the department is playing a key role. The department produces a large number of publications, and offers solutions to the industry regularly and is also active with regular outreach activities like workshops, conferences and executive programs for industry personnel. The department has been recognized as QIP Centre for M.Tech and Ph. D. programmes.*





## Faculty Details:

S. No	Name of the Faculty	Highest Qualification	Research Interests	Photograph
1	<b>Dr. Adepu Kumar, Professor</b>	PhD	Friction stir welding/Processing, Additive Manufacturing, Electrical Discharge Machining, Fabrication and characterization of Micro/Nano composites	
2	<b>Dr. K. Madhumurthy, Professor</b>	PhD	Thermal Engineering; IC Engines; Biofuels; Entrepreneurship; Industrial and Small Enterprise Management	
3	<b>Dr. C. Surya Prakasa Rao, Professor</b>	PhD	Manufacturing	
4	<b>Dr. S. Srinivasa Rao, Professor</b>	PhD	Two-phase flow, I.C. Engines, Experimental Heat Transfer, Solar Energy	
5	<b>Dr. P. Bangaru Babu, Professor</b>	PhD	Mechanical Vibrations; Vibration Control; Finite Element Analysis; Mechanism Science; Engineering Design, Rotor Dynamics, Vehicle Dynamics.	
















6	<b>Dr. A. Venugopal, Professor</b>	PhD	Conventional and Unconventional Machining, Coatings for High Speed Machining, Rapid Prototyping, Metrology	
7	<b>Dr. N. Selvaraj</b>	PhD	Modeling and Simulation, Flexible Manufacturing System, CNC Technology, Machine tools, Pull Systems and Composite Materials.	
8	<b>Dr. P. Ravi Kumar, Professor</b>	PhD	I.C. Engines, Alternate Fuels, Design of Air Car, Fuel Cell Car(Solar/Hydrogen), Flying car, Engine Simulation, Lean burn combustion, Adiabatic engine, CNG & HCNG engine, Exhaust gas re-circulation, Turbocharger engines.	
9	<b>Dr. G. Amba Prasada Rao, Professor</b>	PhD	IC Engines; Engine Exhaust emission control; Alternate fuels; HCCI, Combustion	
10	<b>Dr. L. Krishnanand, Professor</b>	PhD	Industrial Engineering ; CAD/CAM ; Supply Chain Management ; Additive Manufacturing	
11	<b>Dr. A. Neelakanteswara Rao, Professor</b>	PhD	Operations Management, Supply Chain Management, Theory of Constraints, Quality Engineering and Management	

12	<b>Dr. K. V. Sai Srinadh, Professor</b>	PhD	Mechanical behavior of materials, Manufacturing process	
13	<b>Dr. R. Narasihma Rao, Professor</b>	PhD	Tribology, Kinematics & Dynamics of Machinery, Machine Design, Finite Element Methods, Advanced Light Weight Composites	
14	<b>Dr. V. Suresh Babu, Professor</b>	PhD	Mechanism, Dynamics, Vibrations, Composite Material, Fault Diagnosis	
15	<b>Sri. I. A. K. Reddy, Associate Professor</b>	M.Tech	Elements of Mechanical Engineering	
16	<b>Sri. G. R. K. Gupta, Associate Professor</b>	M.Tech	CFD, Turbo-machines, Jet propulsion	
17	<b>Dr. A. Veeresh Babu, Associate Professor</b>	PhD	IC Engines, Alternate Fuels, Emissions control, Fuel cell, Refrigeration and Air-conditioning	

18	<b>Dr. Y. Ravi Kumar, Associate Professor</b>	PhD	CAD/CAM/CIM, rapid prototyping, additive manufacturing, 3D printing, Bio-CAD, Bio-printing	
19	<b>Dr. M. Joseph Davidson, Associate Professor</b>	PhD	Metal Forming, CAD/CAM, Statistical Modeling	
20	<b>Dr. P. Subash Chandra Bose, Associate Professor</b>	PhD	Machining of high temperature alloys, CNC technologies, Optimization techniques, composite materials	
21	<b>Dr. V. Vasu, Associate Professor</b>	PhD	Nano-materials, Nano-fluids, Nano-composites, Material testing Sustainable manufacturing, Metal cutting, Micro-Nano Machining Mechatronics & Systems Controls	
22	<b>Dr. G. Naga Srinivasulu, Associate Professor</b>	PhD	I.C. Engines; Heat Transfer and Turbo machines	
23	<b>Dr. P. Vamsi Krishna, Associate Professor</b>	PhD	Sustainable Manufacturing; Application of solid lubricants in machining; Application of nano-materials in machining.	

24	<b>Dr. K. Kiran Kumar, Associate Professor</b>	PhD	Thermal Engineering; Heat Transfer; Nano-fluids; Refrigeration & Air-Conditioning; CFD; Non-Conventional Energy sources.	
25	<b>Dr. V. Rajesh Khnana Raju, Associate Professor</b>	PhD	Fluid Dynamics, Heat Transfer, CFD, Combustion, Microfluidics	
26	<b>Dr. Srikanth Korla, Associate Professor</b>	PhD	Vibration Analysis and Energy Harvesting, Structural Health Monitoring, Composite Laminates	
27	<b>Dr. Hari Kumar Voruganti, Associate Professor</b>	PhD	Geometric Modeling for CAD, Finite Element / Iso-geometric Analysis, Robotics and Applied Optimization.	
28	<b>Dr. D. Jaya Krishna, Associate Professor</b>	PhD	Utilization of Solar energy, CFD, Latent heat storage materials, Aerodynamics of cricket ball, Heat line visualization, heat transfer in porous media	
29	<b>Dr. B. Satish Ben, Associate Professor</b>	PhD	Structural Health Monitoring, Tool Condition Monitoring, Nano Composites	

30	<b>Dr. V. P. Chandra Mohan, Associate Professor</b>	PhD	(i) Computational Fluid Dynamics(ii) Convection and conduction heat transfer(iii) Drying and Simultaneous solution of heat and mass transfer(iv) Alternative fuels and Hydrogen fuel cell(v) Experimental heat transfer	
31	<b>Dr. T. Sadasiva Rao, Assistant Professor</b>	PhD	Manufacturing Engg. & Foundry Technology	
32	<b>Dr. Syed Ismail, Assistant Professor</b>	PhD	Surface Texturing; Lubrication;	
33	<b>Dr. Karthik Balasubramanian, Assistant Professor</b>	PhD	Microchannel Flow Boiling; Phase Change Heat Transfer; Microfluidics; Thermal management; Solar Thermal; Solar PV and Hybrid systems; HVAC systems.	
34	<b>Dr. G. Raghavendra, Assistant Professor</b>	PhD	Composites, Nano materials, Tribology, Polymer Composites.	
35	<b>Dr. Gudipadu Venkatesh, Assistant Professor</b>	PhD	Abrasive Flow Machining, Magnetic Abrasive finishing, Non-traditional manufacturing processes, Microwave Material processing, Hybrid Machining, Advanced Manufacturing Processes, Surface Engineering.	

36	<b>Dr. Vijay Kumar Manupati, Assistant Professor</b>	PhD	Manufacturing Systems Design, Supply Chain Management, Health Care Systems Optimization and Simulation, Intelligent Manufacturing Systems, Soft Computing Techniques including Artificial and Machine Intelligence Techniques.	
37	<b>Dr. P. Suresh, Assistant Professor</b>	PhD	Distributed-Reconfigurable (1D-3D) and Integrated macro/microsensors design.; Non-Destructive Testing and Wave Propagation.; Temperature-dependent materials property measurement of solids/fluids.; Also, interest in Advanced Energy.	
38	<b>Dr. Marrapu Bhargava, Assistant Professor</b>	PhD	Metal forming - sheet metal forming, formability evaluation and prediction, hydroforming and formability at elevated temperatures, Mechanical behaviour of materials, Heat treatment processes, Material model development	
39	<b>Dr. Hari Krishna Chilukoti, Assistant Professor</b>	PhD	Nanoscale Heat and Mass Transfer; Molecular Dynamics	
40	<b>Dr. Anant kumar Rai, Assistant Professor</b>	PhD	Fluid mechanics, Hydraulic turbines, Turbomachinery, Hydropower, Renewable Energy, Material wear testing, Sediment Transport	
41	<b>Dr. Shivraman, Assistant Professor</b>	PhD	Welding, wear, corrosion and welding metallurgy	
42	<b>Dr. Manjaiah M, Assistant Professor</b>	PhD	Advanced manufacturing, shape memory alloys, additive manufacturing, surface engineering	



43	<b>Dr. Gaurav Kumar Sharma, Assistant Professor</b>	PhD	Computer aided design, digital manufacturing, product design	
44	<b>Dr. Satyanand Abraham, Assistant Professor</b>	PhD	Thermal Management Of Electronic Package, Gas Turbines and vehicle Battery, Waste Heat Recovery, Surface Wettability	
45	<b>Dr. Gangadharudu Talla, Assistant Professor</b>	PhD	Non- traditional machining, metal cutting, surface engineering, micro machining	
46	<b>Dr. Thamarai Selvan, Assistant Professor</b>	PhD	Computational solid mechanics, contact mechanics, FEM, FGM, layer substrate systems	
47	<b>Dr. Prasanth Anand Kumar Lam, Assistant Professor</b>	PhD	Computational Fluid Dynamics and Heat Transfer, Electronics Cooling, Heat Transfer Augmentation, Heat Exchanger Design, Refrigeration & Air-Conditioning	
48	<b>Dr. Chinige Sampath Kumar, Assistant Professor</b>	PhD	Liquid metal cooling, jet impingement, porous media , lattice Boltzmann method	

## Journal Publications

S. Chandrasekhar and **V.R.K. Raju**, Effect of thermal boundary conditions on heat transfer performance of liquid-liquid Taylor flow through a microchannel with obstruction, *The Canadian Journal of Chemical Engineering*, 2021 (SCI)

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### Funded Research Projects

S. No	Project title	Sanctioned Amount	Sanctioned Agency
1	<b>Berra Satish Ben</b> , Development of self-healing materials based on Thermally reversible polymer for biomimetic structural applications	24.11 Lakhs	SERB, DST
2	<b>Anant Kumar Rai</b> , Enhancing Performance Characteristics of a Centrifugal pump in Erosive Conditions	26.06 Lakhs	SERB, DST
3	<b>Shivraman and Adepu Kumar</b> , Mechanical and tribological characterization of Al-Si Product developed by wire arc additive manufacturing	23.74 Lakhs	ARDB
4	V V Mani, <b>V Vasu</b> , Indigenous test bed for Industry 4.0 using Visible Light Communication with Industrial Internet of Things	30.84 Lakhs	ASEAN-DST
5	<b>V Vasu</b> , D Kashinath, Synergistic Effect of Phosphonium, Ammonium Based Ionic Liquid and Nano Lubricants on the Tribological and Rheological Properties	16.6 Lakhs	SERB, DST
6	<b>Chandramohan V.P., Karthik Balasubramanian</b> , Development of Active Cooling for Avionics	14.39 Lakhs	DRDO
7	<b>Adepu Kumar</b> , Kishore Kumar babu, Mahesh Kumar, Investigation of interfacial interaction and grain structure development in friction stir welds for dissimilar joining of high strength aluminum to titanium alloys	10.04 Lakhs	DST
8	<b>B Satish Ben</b> , Development of FRP Composites with Crack Arrest and Self-Healing to Maintain Structural Integrity	30.06 Lakhs	DST-SERB
9	<b>G.Naga Srinivasulu (PI), S.Srinivasa Rao and V.Vasu</b> ,	43.24 Lakhs	SPARC



	Experimental Investigations on different Geometrical shapes of Passive Direct Methanol Fuel cell stacks for Low Power Applications		
10	<b>G.Naga Srinivasulu (PI), S.Srinivasa Rao, Amba Prasad Rao and V.R.K.Raju</b> , Simulation and experimental evaluation of dual-fuel Homogeneous Charge Compression Ignition Engine by using reactivity fuels	36.78 Lakhs	SPARC
11	<b>G.Naga Srinivasulu (PI), P.V.Suresh and S.Srinivasa Rao</b> , Design and Development of Passive Direct Methanol Fuel cell integrated with liquid electrolyte for Portable Power Applications	19.45 Lakhs	SERB-EMR
12	<b>Gudipadu Venkatesh</b> , Manufacturing of Advanced materials using microwave hybrid heating technique		MHRD-NITW
13	<b>P. Vamsi Krishna (CO-PI)</b> , National Centre for Development of Advanced Materials and Manufacturing Processes for Clean Coal Technologies for Power Applications	90.81 Lakhs	DST-ARCI
14	<b>P. Vamsi Krishna (PI)</b> , Vibration Assisted Turning for Improving Fatigue Life of Ti6Al4V Aerospace Components	28.6 Lakhs	DST-AMT
15	<b>R Narasimha Rao, Syed Ismail</b> , Insight Development on Tribological Response of Hybrid Aluminum Based Nanocomposites for Transportation sector	40.52 Lakhs	SPARC
16	<b>Srikanth K., Uday Bhasker M.</b> , Modelling and Simulation of Energy Harvesting using Piezoelectric Materials and Super Capacitors	6.75 Lakhs	RCI - DRDO
17	<b>Suresh Periyannan</b> , Ultrasonic Sensors Design and Development for Industrial Application	5.0 Lakhs	MHRD-NITW
18	<b>Syed Ismail</b> , Development of Multi-Scale Textured Piston Ring and Study of its Impact on the Fuel Economy of an Internal Combustion Engine	32.04 Lakhs	SERB

19	<b>V.K Manupati</b> , Developing of Telefacturing based distributed manufacturing support system for optimal manufacturing service for Indian small and medium scale enterprises	5.0 Lakhs	MHRD-NITW
20	<b>V.K Manupati</b> , Developing of Telefacturing based distributed manufacturing support system for optimal manufacturing service for Indian small and medium scale enterprises	13.59 Lakhs	
21	<b>V.K Manupati</b> , Artificial Intelligence, Machine Learning and Deep Learning applications in Production and Manufacturing systems	9.0 Lakhs	DST-ICPS
22	<b>K.Madhu Murthy, Dr. D. Jaya Krishna, Dr. A. Veeresh Babu, and Prof. G Ambaprasad Rao</b> , "Internal flow field analysis of Solid Rocket Motor with thrust termination ports"	9,93,850	ASL, DRDO

### Consultancy work details

**Dr. A. Veeresh Babu, Prof.K. Madhu Murthy**, Scientific study for assessment of

DPM at SRP-OCP and JVR-OCP mines of the SCCL for an amount of Rs. 555344/-(On going)

### Patents (Filed, Published, Granted and Licensed)

#### a. Filed

K. Balasubramaniam, **Suresh Periyannan**, Integrated Thermocouple Waveguide Sensor System and Method To Measure Physical Properties Of Waveguide Material And Surroundings, PCT Patent

Manmadhachary A, Aditya Mohan A, Giridhar Kumar V and **Ravi Kumar Y**, Implantable Device for Temporomandibular Joint and Method of Production Thereof, US Patent

P S Ranjit, **A. Veeresh Babu**, Steering Design- Part III: Evaluation of Angle between Horizontal Center line of the Pivot centers to drop arms of left side wheel of Ackerman Steering Mechanism based Steering on Automobile by considering the Acute angle

**Adepu Kumar** and P Naresh, Multi-Groove Technique to Formulate Bulk Hybrid Surface Metal Matrix Composites by Friction Stir Processing

#### b. Published

**Chandramohan V.P.**, Ramakrishna Balijepalli, Pritam Das, **K. Kirankumar**, Design and development of solar updraft tower (SUT) plant for generating electrical power: A novel structure, appropriate materials with optimized collector angle, Indian Patent

**Srikanth Korla**, Suryawanshi Nikhil Ramakrishna, Pen Stand Puzzle, Indian Patent

**Srikanth Korla**, Akash Paidalwar, Shubham Awashi, Saumay Agarwal, Dual Security Pad-Lock, India Patent

### c. Granted

K. Balasubramaniam, **Suresh Periyannan**, A novel ultrasonic waveguide technique for distributed sensing and measurements of physical and chemical properties of surrounding media, US Patent

K. Balasubramaniam, **Suresh Periyannan**, A Novel Waveguide Technique for the Simultaneous Measurement of Temperatures Dependent Properties of Materials, US Patent

### Books and Book Chapters

Naga Ramesh Korasikha, Thopudurthi Karthikeya Sharma, **Gaddale Amba Prasad Rao** and **Kotha Madhu Murthy**, Recent Advancements in Thermal Performance Enhancement in Microchannel Heatsinks for Electronic Cooling Application in the Book-Heat Transfer - Design, Experimentation and Applications [Working Title] edited by Dr. Miguel Araiz:Licensee IntechOpen

Abhinay V., Krishna P S.V.S.S.R., Karthikeya Sharma T., **Amba Prasad Rao G.**, Experimental Analysis of Performance and Emissions of a Diesel Engine Fueled with Diesel-Water Emulsions In: Gupta A., Mongia H., Chandna P., Sachdeva G. (eds) Advances in IC Engines and Combustion Technology. NCICEC 2019. Lecture Notes in Mechanical Engineering. Springer, Singapore. [https://doi.org/10.1007/978-981-15-5996-9\\_39](https://doi.org/10.1007/978-981-15-5996-9_39)

### Conferences, workshops, FDPs, Webinars organized

**Dr. M Vjaya Kumar (MED)**, NIT Warangal in collaboration with MNIT Jaipur and NIT Uttarakhand have organized its 1st International Conference on Evolution in Manufacturing (ICEM-2020) on December 10-12, 2020.

**Prof. Narasimha Rao R**, and **Dr. Syed Ismail**, A FIVE DAY NATIONAL SPARC WORKSHOP ON Tribological and Corrosion Behaviour of Advanced Metal Matrix Nano-Composites for Engineering/Biomedical Sector, 18th to 22nd October, 2021 (Invited Academic Report 2020-21 NIT Warangal

Speaker: Dr. Manoj Gupta, Assoc. Professor, National University of Singapore)

**Dr. S Srinivasa Rao and Dr. G Naga Srinivasulu** have organized a FIVE Day SPARC Workshop on "Fuel Cell Technology and its Research Opportunities" during 04/01/2021 - 08/01/2021 (Invited Speaker: Prof. AJAY K. PRASAD, University of Delaware, USA).

**Dr. V Vasu** has organized a A Ten Day Online Student Training Programme on Future Skill Technologies "Robotics & Automation" in two batches during 05-10-2020 to 14-10-2020 (First Batch) and 26-10-2020 to 05-11-2020 (Second Batch) Under TEQIP -III

**Y. Ravi Kumar, L. Krishnanand, M. Manjaiah**, A One-week FDP on "Teaching and Learning of Additive Manufacturing Technology: Emphasis on Metal 3D Printing", July 13-18, 2020

**V Vasu and Shivraman T** have conducted a Five Day ATAL - AICTE Online FDP on Mechatronics & MEMS during July 05-09, 2021.

**Dr. M Manjaiah, Dr. Gangadharudu Talla and Prof. A Kumar**, Online FDP on "Teaching and Learning of Advances in Manufacturing Technologies" during 30th Nov. - 04 Dec., 2021.

### Guest Talks/webinars delivered

**Prof. G. Amba Prasad Rao**, IC Engines, Performance & Emissions, JNTU Anantapur on 20/01/2021

**Dr. P.Vamsi Krishna**, Sustainable manufacturing, Pragati Engineering College, Surampalem, AP on 11/06/2020.

**Dr. P.Vamsi Krishna**, Hybrid nano cutting fluids in machining, Gudlavalleru Engineering college, Gudlavalleru, A.P, on .20-06-2020

**Dr. P.Vamsi Krishna**, Response Surface Methodology, CBIT, Hyderabad, Telangana on 25-11-2020

**Dr. P.Vamsi Krishna**, Grey Relational Analysis, CBIT, Hyderabad, Telangana on 23-12-2020

### **Awards/ Recognitions/ Achievements**

**Dr. V Vasu**, Recipient of the Outstanding Engineering Services to Society Award by The Institute of Engineers (India), Rajasthan State Centre Jaipur on 1/08/2021

### **PhD Research guidance (Completed during the academic year)**

**P Venkateswara Babu**, completed his Phd with title "Tribological Performance of Positive Surface Textured Sliding Contact under Mixed Lubrication– An Experimental and Numerical Approach" under the guidance of Dr. Syed Ismail and Dr. B Satish Ben

**T Manoj Kumar Dundi**, completed his Phd with title "Numerical Investigations for Enhanced Liquid Mixing Characteristics in Passive T-type Micromixers" under the guidance of Dr. V.R.K.Raju and Dr. V.P. Chandramohan

**Pratap Naidu**, completed his Phd with title "Mechanical and tribological behaviour of graphitic carbon nitride(g-C<sub>3</sub>N<sub>4</sub>) filled glass fiber epoxy hybrid Composites" under the guidance of Dr G. Raghavendra

**Manoj Panchal**, completed his Phd with title "Tribological and mechanical studies of bio-based novel nano composites and their application for wastewater treatment" under the guidance of Dr G. Raghavendra

**Minugu Om Prakash**, completed his Phd with title "Fabrication and Characterization of Porous Nano Carbon from Activated Biowaste for Structural and Tribological Applications" under the guidance of Dr G. Raghavendra

**G. Arun Kumar**, completed his Phd with title "Design, Development and fabrication of high redundancy linear electromechanical actuators for fault tolerance" under the guidance of Dr. V V asu and Dr. Srikanth Korla

**Ch. Sri Chaitanya**, completed his Phd with title "Mechanical and Tribological Performance of Cenosphere based Syntactic Foams" under the guidance of R.N.Rao

**Viswanadham L**, completed his PhD with title "Experimental Investigation on the Dynamic Behaviour of Electronic Mounting Structures in Aerospace Vehicles" under the guidance of R.N.Rao, IM Chabra

**U Vinay Kumar**, completed his PhD with title "Isogeometric Analysis and Shape Optimization of Structural Elements and Acoustic Horn" under the guidance of Dr Hari Kumar Voruganti

**VVMJ Satish**, completed his Phd with title "Optimization Based Inverse Kinematics and Redundancy Resolution of Hyper Redundant Robots in Cluttered Workspaces" under the guidance of Dr Hari Kumar Voruganti

**P Venkateswara Babu**, completed his Phd with title "Tribological Performance of Positive Surface Textured Sliding Contact under Mixed Lubrication– An Experimental and Numerical Approach" under the guidance of Dr. Syed Ismail and Dr. B Satish Ben

**Madhukar .P**, completed his Phd with title "Fabrication and Experimental Investigations on Nano-Particulates Reinforced Al7150 Metal Matrix Composites" under the guidance of Prof. CSP. Rao

**E.Anusha**, completed his Phd with title "Investigation On The Influence Of Different Thermal Processing Conditions In Laser Surface Hardening Of Bearing Steel And Bearing Elements" under the guidance of Dr.Adepu Kumar & Dr.S.M.Shariff, Sc-F, ARCI, HYD

**G. Venkatesh**, completed his Ph.D with title "Design and optimization of conformal cooling channels for injection moulding using additive manufacturing" under the guidance of Dr. Y. Ravi Kumar

**Mr. C. Naresh**, completed his Phd with title "Machining of Nitinol alloys" under the guidance of Dr.PSC Bose

**Srinivasa Reddy Badduri**, completed his Phd with title "Experimental And Numerical

Analysis Of Pem Fuel Cell Performance Using Bio-Inspired Flow Fields" under the guidance of Dr. G Naga Srinivasulu and Prof. S Srinivasa Rao

**Balijepalli Ramakrishna**, completed his Ph. D with title "Design, Development and Performance Parameters Evaluation of Small Scale Solar Updraft Tower (SUT) Plant" under the guidance of V P Chandra Mohan

**G. Uma Maheswararao**, completed his Ph. D with title "Selection of a potential organic PCM for low temperature heat storage applications" under the guidance of Dr. D. Jaya Krishna

**Lokesh Kalapala**, completed his Phd with title "Experimental and numerical investigations of design parameters for a shell and tube latent heat storage unit" under the guidance of Dr. D. Jaya Krishna

**Y. Siva Kumar Reddy**, completed his Ph. D with title "Analytical study on identification of energy efficient liquid desiccant at optimum operating parameters for liquid desiccant air

#### **International visits of the faculty members**

NA

#### **Distinguished guests visited the department**

**Dr. Surendra Kumar**, Chairman, Armament Design Mechanism & Ballistic (ADMB) Panel, DRDO (Ex- Director ARDB Pune) visited the

conditioning system" under the guidance of Dr. Karthick Balasubramaniam, Dr. Chandramohan V.P.

**Valaparla Ranjith Kumar**, completed his Ph. D with title "Numerical Study of Heat Transfer and Fluid flow Characteristics in Sinusoidal and Circular Wavy Microchannels" under the guidance of Dr. Karthik Balasubramanian

**S. Venkata Sai Sudheer**, completed his Phd with title "Investigation of Thermal Performance of Two Phase Natural Circulation Loop Filled with Nanofluid" under the guidance of Dr. K. Kiran Kumar and Dr. Karthik Balasubramanian

**M.Vinod Babu**, completed his Ph.D with title "Studies On A 4-Cylinder CRDI Engine with Split Injection Strategy using oxygenated Fuel Blends" under the guidance of K.Madhu Murthy and G.Amba Prasad Rao

**S.Nagendra Babu**, completed his Phd with title "Studies on design and development of high temperature cellular ceramic heater" under the guidance of G.Amba Prasad Rao

Department of Mechanical Engineering, NITW, on October 07th, 2021

#### **Best student papers and other achievements**

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## Details of students joined in higher educational institutes

S. NO	Students Name	Roll No.	Course completed at NITW (BTech/M Tech/PG/MBA/PhD)	Placement details	Higher Education details
1	Vemuri Pavan Sai	3166	BTech	--	MS, University of Illinois Urbana-Champaign, USA
2	Abdus Samad Hashmy	3101	BTech	--	MS, RWTH Aachen University, Germany
3	Nitin Bhatia	3235	BTech	--	MS, Northwestern University, USA
4	Jahnav Rokalaboina	3149	BTech	--	MS, Arizona State University, USA
5	Sahil Ramagiri	3146	BTech	BNY Melon	--
6	Dipansh SIngh	3215	BTech	Bajaj Auto	--
7	Yash Sahu	3250	BTech	Bajaj Auto	--
8	Radhika Bhandari	3144	BTech	ExxonMobil	--
9	Ganesh S	3117	BTech	ExxonMobil	--
10	Ruthik L	3226	BTech	Bajaj Auto	--
11	Abhishek Anand	3202	BTech	Bajaj Auto	--
12	Siddhant Rajurkar	3156	Btech	ExxonMobil	--
13	M V N S Satya Manikanta Sai	3227	BTech	ITC	--
14	Sachin Goyal	3249	BTech	CITI Bank	--
15	Rohan Nema	3148	BTech	ZS	--
16	Mannem Teja	3130	BTech	ZS	--
17	Shah Amit Kumar	3253	BTech	Standard Chartered Bank	--
18	Harish Reddy Thalla	3261	BTech	Standard Chartered Bank	--
19	Adarsh Panchbhai	3237	BTech	Indus Insights	--



20	Aniket Viswanath	3167	BTech	Bosch	--
21	Viraj Deshmukh	3114	BTech	L&T Infotech	--
22	Yash Kakade	3270	BTech	L&T Infotech	--
23	Sirigada Tarun	3257	BTech	CollegeDuni a	--
24	Bollu Sumanth	3111	BTech	CollegeDuni a	--
25	Sesha Gagan Tipparaju	3262	BTech	Fractal Analytics	--
26	Sushanth Todupunuri	3162	BTech	BEL	--
27	Yash Maheshwari	3169	BTech	Bosch limited	--
28	Pokala Akhila	3140	BTech	ExxonMobil	--
29	Abdus Samad Hashmy	3101	BTech	ExxonMobil	--
30	Jai Bastapure	3109	BTech	Axis Bank	--
31	Veludurti Prasannakumar	3266	BTech	Axis Bank	--
32	Sudharshan Ramesh	3159	BTech	Axis Bank	--
33	Himanshu Sahu	3220	BTech	Axis Bank	--
34	AKASH SRIVASTAVA	3205	BTech	Axis Bank	--
35	Suneel Chintam	3113	BTech	Deloittee	--
36	Adhav Mathialagan	3106	BTech	Deloittee	--
37	Harsha Vardhan Kota	3219	BTech	Deloittee	--
38	Avinash Reddy	3210	BTech	Deloittee	--
39	Sayan Bose	3153	BTech	TATA PROJECTS	--
40	Katkuri Srikanth	3123	BTech	Impact Analytics	--
41	Manish Gupta	3229	BTech	Impact Analytics	--

42	Krovi Sri Phani Kishore	3225	BTech	Merilytics	--
43	Yashvardhan Singh	3170	BTech	Novartis Healthcare	--
44	Yenduri Viswanath	3271	BTech	O9 Solutions	--
45	Abhinav Munghate	3102	BTech	O9 Solutions	--
46	Vinay Kumar ReddyKotla	3125	BTech	O9 Solutions	--
47	Abhishek Rudra	3203	BTech	O9 Solutions	--
48	Naman Patil	3234	BTech	HCL	--
49	Manu Mohan	3131	BTech	HLS Asia	--
50	Ravikant Tiwari	3147	BTech	HLS Asia	--
51	Sumit Daud	3213	BTech	Zenoti	--
52	Rakesh Kumar Alasakani	3206	BTech	Thermax	--
53	Raja Anirudh Gandhi Ravipalli	3247	BTech	Thermax	--
54	Rohan Rajpal	3248	BTech	Thermax	--
55	Haneesh Bathini	3209	BTech	ADP	--
56	Shounak Nandan Kossambe	3254	Btech	Capgemini	--
57	Adapa Sunil	3104	BTech	LnT	--
58	Rajeshwari Prasada	3245	BTech	Evosys	--
59	sudeep vaidya	3258	BTech	Byju's	--
60	Dhruv Kumar Acharya	3214	BTech	Byju's	--
61	Pradnyavant Manokumar Gaikwad	3216	BTech	Byju's	--
62	Sri Krishna Mathreya	3160	BTech	Addverb Technologies	--

63	Harshit Adepu	3105	BTech	Addverb Technologies	--
64	Nitish Kumar	3136	BTech	Innominds	--
65	Parth Singh	3139	BTech	Vedanta	--
66	Ashutosh Singh	3108	BTech	Vedanta	--
67	Shangar Shudharsanam	3154	BTech	Vedanta	--
68	Ashwin John	3208	BTech	Noveltech	--
69	Dileep Varma Virodhula	3115	BTech	Public Sapient	--
70	Bansod Amartya	3207	BTech	Standav	--
71	Aldrin Saju	3107	BTech	Tata Hitachi	--
72	Phanindra Korlepara	3224	BTech	Affluence Infosystems	--
73	Vivekvardhan Bommana	3211	BTech	Oracle	--
74	Pankaj Sankhala	3138	BTech	K-12 Techno Services Pvt. Ltd.	--
75	Nikhil Chouhan	3135	BTech	314e	--
76	Pasham Bhanumahesh	3239	BTech	Cognizant	--
77	Vangala Pranay Deep Reddy	3264	BTech	Axis My India	--
78	Prateek Agarwal	3241	BTech	tredence analytics	--
79	Justin Varghese	3221	BTech	tredence analytics	--
80	Rahul Agarwal	3244	BTech	tredence analytics	--
81	Abhijeeth	3201	BTech	Cloud4c	--
82	Jinna Jayadeep Reddy	3121	BTech	Prokarma	--
83	Sai Aneerudh Ramesh	3151	BTech	PrimEra	--
84	Raunak Bhade	3246	BTech	JK Tyres	--

85	Usama Hamid Dhopavkar	3263	BTech	JK Tyres	--
86	PRAVEEN TOMAR	3143	BTech	JK Tyres	--
87	Komroju Abhishek	3124	BTech	JK Tyres	--
88	Bhukya Sharath Chandra Rathod	3110	BTech	Byju's	--
89	Sahil Patil	3150	BTech	Byju's	--
90	Srinath Reddy Kondam	3158	BTech	HD Works	--
91	Siddharth Singh	3256	BTech	Tata Chemical	--
92	Nikith kavi Raj	3243	BTech	BYJU's	--
93	Vijay Varshit S	3259	BTech	KEC	--
94	N Bhatia	3235	BTech	ZS	--
95	Abhishek Kumar Sinha	3103	BTech	Ganit	--
96	GEDDAM PAVAN KUMAR	3118	BTech	Saint Gobain	--
97	Priyam Dutta	3712	MTech	Wabtec	--
98	Bhosle Kshitij	3702	MTech	HLS Asia	--
99	Kahar Ankit Kishorbhai	3707	MTech	HLS Asia	--
100	Shubham Shukla	3619	MTech	Thermax	--
101	Nitish Maan	3513	MTech	Evosys	--
102	SAHIL ARORA	3761	MTech	Byju's	--
103	Chetan Vijay Mali	3609	MTech	Byju's	--
104	Kadimi Hemanth Kumar	3803	MTech	Byju's	--
105	Rahul Bhatler	3713	MTech	Volvo	--
106	Vivekanand Shanbhag	3810	MTech	TCS Innovator profile	--
107	Saurabh	3716	MTech	VECV	--
108	Anand Singh Rawat	3651	MTech	Siemens Gamesa	--

109	Lopinti Aneel kumar	3661	MTech	Siemens Gamesa	--
110	Deepanshu Yadav	3555	MTech	LnT	--
111	Orsu Raja Shekar	3710	MTech	LnT	--
112	Sachin Sagar	3760	MTech	LnT	--
113	Utkarsh Raj	3764	MTech	K-12 Techno Services Pvt. Ltd.	--
114	MUDIT GUPTA	3611	MTech	K-12 Techno Services Pvt. Ltd.	--
115	Nitin Gupta	3563	MTech	BRIDGEi2i Analytics	--
116	Nikhil Chirangi	3656	MTech	Rexnord	--
117	BHARATH SAI YELUGURI	3625	MTech	Mechartes	--
118	Vivek Praveen	3623	MTech	Tetrahedron	--
119	Roshan Jamthe	3606	MTech	Tetrahedron	--
120	Shivam Parashar	3568	MTech	Tetrahedron	--
121	Nayan Kumar	3614	MTech	Tetrahedron	--
122	Polu Sai Teja Reddy	3565	MTech	Tetrahedron	--
123	Karan Khatri	3757	MTech	Tetrahedron	--
124	Rishabh Tripathi	3669	MTech	Rexnord	--
125	VELMAREDDY PRUDHWIDHAR REDDY	3720	MTech	JK Tyres	--
126	Arjun Ajith B	3701	MTech	JK Tyres	--
127	Satish Banoth	3653	MTech	Yash fans	--
128	Krishna Kumar	3657	MTech	Yash fans	--

## Department Association/Students Clubs Activities

- The Mechanical Engineering Association has conducted various workshops on mechanical engineering software and recent technologies like Ansys, SolidWorks Industrial Robots etc.
- A team of Electrical and mechanical Engineering Students participated in the All India BAHA Electrical Vehicle Competition held at Indore from December 23 to 27, 2020 and won a special prize in the Innovative Design category. The Team includes Mr. Riayaz, Ms. Sridevi etc.
- 16 Cylinder Jenbacher Gas Engine donated by GE India Industrial Bangalore:

GE India industrial Pvt Ltd., Bangalore has donated the 16 cylinder Jenbacher Gas engine with ID 1202215, along with Generator and its accessories worth € 50,000 (Euros) for education and training purposes. The engine was received on 15th November 2021 and was installed in the Thermal Engineering Laboratory.

The Director NIT Warangal, the Head and the faculty of the department of Mechanical Engineering thankfully acknowledge the commitment and support of GE in helping NIT Warangal in promoting technical education and research.



## Summary

S.No.	Activity	Number
<b>1</b>	<b>Publications (Peer Reviewed Journals/ conferences)(SCOPUS/SCI)</b>	162
	International Journals	162
	National Journals	-
	International Conferences	-
	National Conferences	-
<b>2</b>	<b>Funded Research Projects/SPARC projects (2019-20)</b>	530.95 Lakhs
	Completed Projects	
	DBT, SERB	
	Ongoing Projects	395.21 Lakhs
	IMPRINT PROJECTS	
	FIST PROJECT	
	BRICS project	
	DST, SERB, BRNS, DRDO	
<b>3</b>	<b>SPARC Project Workshops</b>	
<b>4</b>	<b>Consultancy Works (2019-20)</b>	
<b>5</b>	<b>Patents</b>	
	Awarded	
	Filed	
<b>6</b>	<b>Books and Book Chapters</b>	



	Books	2
	Book Chapters	
<b>7</b>	<b>Conferences/ Workshops/GIAN courses/FDPs Conducted</b>	
<b>8</b>	<b>Guest talks/ Webinars delivered</b>	
<b>9</b>	<b>New Labs Established (Equipment/Software Procured)</b>	
<b>10</b>	<b>Awards/Recognitions/Achievements</b>	
<b>11</b>	<b>Research Guidance (Completed in 2019-20)</b>	
<b>12</b>	<b>International Visits of the Faculty Members/ students</b>	
<b>13</b>	<b>Students Achievements</b>	
	Placements	
	B.Tech	
	MTech	
	Higher Education (M.Tech, PhD at IITs & Abroad)	4
	Lab Development Activities	
	Conference visits	
<b>14</b>	<b>Mechanical Engineering Association Activities</b>	<b>27</b>
<b>15</b>	<b>Distinguished Guests visiting the Department/Delivering Expert Lecture/Keynote Address</b>	<b>1</b>
<b>16</b>	<b>Outreach Programmes</b>	<b>16</b>

# DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

## Brief History of the Department, Academic Programs

*Electronics and Communication Engineering was integral part of Electrical Engineering department with masters program in Electronics & Instrumentation [1967] and under graduate program in ECE [1971]. The ECE Department got separated subsequently in 1990.*

*The department witnessed sea change in terms of academics and research progress since its inception through addition of 2 more PG programs in due course and extensive full time and part-time research programs viz., VLSI System design and Advanced Communication systems.*

*The ECE department gradually acquired expertise in multiple dimensions through strong 36 full time faculty members catering to the academic needs of nearly 700 students. The department bagged several R&D projects to the tune of Rs 3.36 crores in the niche areas including smart antennas, Millimeter-wave front-ends , IC Design, 5G communication, signal processing and machine learning sponsored by MHRD, DST, Ministry of Defense, Meity etc.*

*Our UG and PG students are placed in several core companies including Intel, Qualcomm, Texas Instruments, Cadence, Sandisk, Xilinx, Synopsys etc., along with software companies like Oracle, Goldman Sachs, Microsoft, Mathworks etc. The department enjoys strong research collaborations with Defense laboratories, AMD, ECIL, Intel, Austria micro Systems. With a blend of experienced and young faculty the department is inching ahead towards new heights.*





## Faculty Details:






S.No.	Name of the Faculty Member and Designation	Highest Qualification	Research Interests	Photograph
1.	Prof. L Anjaneyulu, Professor & Head	Ph.D.	Computer Networks, Antennas, Microwave Engineering, Signal Processing, Radar Signal processing, Antennas Underwater communications	
2.	Prof. N.V.S.N. Sarma, Professor (HAG)	Ph.D.	Numerical Electromagnetics ANNs and Wireless Sensor Networks Antennas	
3.	Prof. T. Kishore Kumar, Professor	Ph.D.	Speech Signal Processing and Adaptive Signal Processing, Radar Signal Processing, Real Time Signal Processing using Embedded Systems, Real Time Embedded System, Machine Learning	
4.	Prof. N. Bheema Rao, Professor	Ph.D.	On-Chip Inductors for RF Applications and Device Modelling	
5.	Prof. C. B. Rama Rao, Professor	Ph.D.	Digital Signal Processing, Adaptive Signal Processing, DSP Architectures and Algorithms.	
6.	Sri. M. V. Raghunath, Associate Professor	M. Tech.	5G Communications, Image Processing, Pattern Recognition	
7.	Sri. Ravi Kishore Kodali, Associate Professor	M. Tech.	Wireless Sensor & Computer Networks Digital System Design Wireless Communications	
8.	Sri. S. K. L. V. Sai Prakash, Associate Professor	M. Tech.	Wireless Communications, Cellular Networks, Computer Networks and Internet of Things	

9.	Sri. P. Harikrishna Prasad, Associate Professor	M. Tech.	Pulse shaping in OFDM, Wireless Communications	
10.	Dr. B. Lakshmi, Associate Professor	Ph.D.	IoT VLSI Architectures Embedded System Design FPGA Design Low Power VLSI design	
11.	Sri. K. V. Sridhar, Associate Professor	M. Tech.	Bio-medical signal/Image Processing Adaptive Signal Processing	
12.	Dr. T. V. K. Hanumath Rao, Associate Professor	Ph.D.	Biomedical signal processing and VLSI	
13.	Dr. P. Sreehari Rao, Associate Professor	Ph.D.	Analog and Mixed signal IC Design, Power management IC Design, Communication Systems, EDA optimization , Energy Harvesting circuits for IoT	
14.	Dr. Amara Prakasa Rao, Associate Professor	Ph.D.	Smart Antenna Systems, Optimization Techniques, EDC, & Signals and Systems	
15.	Dr. P. Muralidhar, Associate Professor	Ph.D.	VLSI Architectures, Embedded Systems Design, System on Chip (SoC) Design	
16.	Dr. D. Vakula, Associate Professor	Ph.D.	Multifunction Antennas, Ultrawideband antennas, Metamaterials, Fault Diagnosis of Antenna Arrays, Waveguide slot radiators, Conformal Antennas, Artificial neural networks, Terahertz systems	
17.	Dr. V Venkata Mani, Associate Professor	Ph.D.	Signal Processing for wireless communication MIMO OFDM UWB & Green Communication	

18.	Dr. J. Ravi Kumar, Associate Professor	Ph.D.	Signal Processing, Control System Design, Machine Learning	
19.	Dr. S. Anuradha, Associate Professor	Ph.D.	Wireless Communications, Coding Techniques, Fading Channels, Cognitive Radios, Signal Processing for Communications, Antennas for Cognitive Radios	
20.	Dr. P. Prithvi, Associate Professor	Ph.D.	Digital System Designs, Embedded Systems Designs, Speech Processing	
21.	Dr. V. Rama, Associate Professor	Ph.D.	Basic Electronics Engg., Digital Electronics, Analog Electronics, Biomedical Instrumentation , Biomedical Signal Processing , Quality Reliability of Electronic Systems , Neural Networks & IC Applications,	
22.	Sri. K. Sarangam, Associate Professor	M. Tech.	VLSI Circuit Design low power design novel device	
23.	Dr. Kalpana Naidu, Assistant Professor	Ph.D.	Wireless Communication, 5G communication, Heterogeneous Communication, Resource allocation	
24.	Dr. Gande Arun Kumar, Assistant Professor	Ph.D.	Microwave and Millimeter wave passive and active circuits, Communication and Radar front end design, Metamaterials, Substrate Integrated Waveguides circuits and antennas, and Reconfigurable filters and antennas	
25.	Dr. Atul Kumar Nishad, Assistant Professor	Ph.D.	VLSI Interconnects, Microelectronics and VLSI, 2D Materials, VLSI Circuits and Systems	



26.	Dr. V. Narendar, Assistant Professor	Ph.D.	Beyond CMOS, Nanoscale device design and modeling, Modeling and simulation of semiconductor devices, Carbon Nanotubes and 2D material based devices, VLSI Circuits & Systems	
27.	Dr. Himanshu Shekha Pradhan, Assistant Professor	Ph.D.	Optic Sensors; Optical Signal Processing; Nonlinear Fiber Optics; Optical Communication; Structural Health Monitoring using Fiber Optic Sensors; Free Space Optical Communication; Channel modelling in FSO system.	
28.	Dr. Gopi Ram, Assistant Professor	Ph.D.	Analysis and Synthesis of Radiation Pattern of Time-Modulated Antenna Array Structures; Evolutionary Optimization Techniques; Application of Soft Computing in Electromagnetics; RF and Microwave.	
29.	Dr. B. K. N. Srinivasarao, Assistant Professor	Ph.D.	VLSI architectures for image and video processing, Embedded systems design, System on chip (SoC), Network on chip (NoC).	
30.	Dr. Mohhamad Farukh Hashmi, Assistant Professor	Ph.D.,	Digital Image Processing, Computer Vision, Machine Vision, Video Processing, Video Codec Design, Embedded Systems, Internet of Things(IOT), Digital Signal Processing(DSP), Machine Learning, Deep Learning for Health Care and Computer Vision, Digital Design, Embedded Image Processing, Biomedical Image Processing, Real Time Operating Systems.	
31.	Dr. M. Satish, Assistant Professor	Ph.D.	Novel devices design using calibrated TCAD; Compact modeling of novel devices; Characterization and fabrication of MOS devices/circuits; Design of low power analog and digital circuits;	

			Design of embedded/IoT applications or systems	
32.	Dr. K. Prakash, Assistant Professor	Ph.D.	Flexible Electronics, Embedded systems, Energy Harvesting, Low Power Processing	
33.	Dr. Vasundhara, Assistant Professor	Ph.D.	Adaptive Signal Processing System Identification and Parameter Estimation	
34.	Dr. Amarjit Kumar, Assistant Professor	Ph.D.	Reconfigurable Multiband and Multifunctional Radio-Frequency Integrated Circuits	
35.	Dr. Ekta Goel, Assistant Professor	Ph.D.	Modeling and Simulation of Advanced MOS Devices	
36.	Dr. Chayan Bhar, Assistant Professor	Ph.D.	Optical and wireless-optical integrated networks	



## Journal Publications

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Kiran Dasari, **Anjaneyulu Lokam**, Jayaraju Nadimkeri, "Application of C-band sentinel-1A SAR data as proxies for detecting oil spills of Chennai, East Coast of India," Marine Pollution Bulletin, 2021, SCIE

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S. Siva Priyanka and **T. Kishore Kumar**, "Generalized Sidelobe Canceller Beamforming with Combined Postfilter and Sparse NMF for Speech Enhancement", Fluctuations and Noise Letter, July 2020 (SCI) (Accepted)

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Y V Koteswararao, **C B Rama Rao**, "Multichannel speech separation using hybrid GOMF and enthalpy-based deep neural networks," Multimedia Systems 27(10), April, 2021, DOI:10.1007/s00530-020-00740-y, SCI

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B.B. Shabarinath, **P.Muralidhar**, "Convolutional Neural Network based Traffic-Sign Classifier Optimized for Edge Inference," TENCON 2020 16-19, November, 2020 Osaka International Convention Center, Osaka, Japan

A Sowjanya, **D Vakula**, "Design of EI shape coupled lines based band pass filter with sharp roll off," The 13th Annual International conference ATMS 2021 Virtual conference" during 18th -20th Feb 2021.

G Srinivas, **D Vakula**, "High Gain and Wide Band Fabry Perot Resonator Antenna," The 13th Annual International conference ATMS 2021 Virtual conference" during 18th -20th Feb 2021.

Kishore Vejanla, SaiKiran Kollikonda, **Venkata Mani Vakamulla**, "Performance Analysis of PAM-DMT Under Double sided Signal Clipping in IM/DD Based Systems" IEEE National Conference on Communication (NCC), pg 1-6, IIT Kharagpur, 2020



Kalyan Chakravarthi, D.V.S.S. Siva Sarma, A. V. Giridhar and **G. Arun Kumar**, "Investigation of Log Periodic Dipole Array Printed Antenna for Recognizing Incipient Discharges in Power Transformer", 2021 1st International Conference on Power Electronics and Energy (ICPEE), January, 2-3, Bhubaneswar, India.

B Prasanthkumar, DB Fayaz, **AK Nishad**, "A Power-Efficient Clock Distribution Network with Novel Repeater," 2020 International Conference on Smart Electronics and Communication

VK Nishad, **AK Nishad**, S Roy, BK Kaushik, R Sharma, "First principle analysis of os-passivated armchair graphene nanoribbons for nanoscale interconnects," 2020 IEEE 20th International Conference on Nanotechnology (IEEE-NANO), 155-158

Salunke, Sharad, M. Venkatadri, **Md Farukh Hashmi**, and Bharti Ahuja. "Image Data Preservation with Fractional Sine Transform and Dual Chaotic Sequence." In Progress in Advanced Computing and Intelligent Engineering, pp. 201-210. Springer, Singapore, 2021.

**Hashmi, Md Farukh**, Kiran Kumar Ashish, Satyarth Katiyar, and Avinash G. Keskar. "AccessNet: A Three Layered Visual Based Access Authentication System for Restricted Zones." In 2020 21st International Arab Conference on Information Technology (ACIT) Egypt, pp. 1-7. IEEE, 2020.

Murthy, Chintakindi Balaram, and **Mohammad Farukh Hashmi**. "RealTime Pedestrian Detection Using Robust Enhanced YOLOv3+." In 2020 IEEE 17th India Council International Conference (INDICON), NSIT Delhi, EEE, 2020.

Murthy, Chintakindi Balaram, and **Mohammad Farukh Hashmi**. "RealTime Pedestrian Detection Using Robust Enhanced YOLOv3+." In 2020 IEEE 21st International Arab Conference on Information Technology (ACIT) Egypt, pp. 1-5. IEEE, 2020.

Swain, Mahendra, Rajesh Singh, and **Md Farukh Hashmi**. "Spade to Spoon: An IoT-Based End to End Solution for Farmer Using

Machine Learning in Precision Agriculture." In Applications of Artificial Intelligence in Engineering, pp. 387-396. Springer, Singapore, 2021.

**Hashmi, Md Farukh**, N. Kusuma Priya, S. Surya Reddy, G. Vakula, and D. Usha. "Drowsiness Detection System Using Raspberry Pi and OpenCV." In International Conference on Mobile Computing and Sustainable Informatics, pp. 661-671. Springer, Cham, 2020.

Akshada Muneshwar, **B.K.N.Srinivasarao** and Ajay Chunduri, "FPGA Implementation and Comparative Analysis of DES and AES Encryption Algorithms using Verilog File I/O Operations," International Conference on Inventive Communication and Computational Technologies [ICICCT 2021] held in Namakkal, from 25-26 June 2021

Ramesh Reddy. D, Bikash K, Vivek K P, Sadek U. Z, and **Prakash Kodali**, "Design and Development of an IoT Based Smart Medication Device" International Conference on Soft Computing for Problem Solving - Accepted

Ramesh Reddy D, Pranava Addanki, Dr. C. D. Naidu, **Dr. Prakash Kodali**, "Extraction of pothole attribute for road infra maintenance using Kinect" 3rd International Conference on Communication and Computational Technologies (ICCCT 2021) February 27-28, 2021 - Accepted

D.Ramesh Reddy, Chandravathi Chella, K. Bala Ravi Teja, Heera Rose Baby, and **Dr.Prakash Kodali**, " Autonomous Vehicle Based on Deep Q-Learning and YOLOv3 with Data Augmentation", International Conference on Communication, Control and Information Sciences (ICCISc)- June 17-18, 2021 - Accepted

## Funded Research Projects

### New:

**Prof. T. Kishore Kumar**, "Development of Novel Video/Image Compression Algorithms", Rs. 9.8 lakhs (RCI-DRDO/CARS).

### Ongoing:



**Prof. L. Anjaneyulu:** Virtual Reality based Simulator for Electric Winder, MOIL Limited (Ministry of Mines), Nagpur, Rs. 18.63 Lakhs.

**Dr. J. Ravi Kumar and Dr. Maheshwaram Satish:** Short Term Training Programme on Machine Learning and Deep Learning for Real time Applications, DST/ICPS/Training/ST/2019-AIDST/ICPS/SCST/2019/55 Dated:31/03/2019,RS-987- GoI-DST-Dr.RKJ-ECE, Rs. 9.00 Lakhs

**Prof. L. Anjaneyulu (Mentor) :** Candidate : Prof T.Anil Kumar, CMRIT, Hyderabad, "Study and implementation of Channel Estimation Techniques for 5G Wireless Communication Systems," Sanctioned (No. TAR/2018/000899), Rs. 18.3 Lakhs.

**Prof. L. Anjaneyulu:** Virtual Reality Simulator for Koepe Winder, Hindustan Copper. Kolkata.

**Dr. P. Sreehari Rao and Dr. P Muralidhar,** "Advanced CMOS clock recovery circuits for mobile applications," SPARC, Rs. 45 lakhs

**Dr D Vakula, Prof NVSN Sarma,** "Modelling and Simulation of Wide Band Antenna Array for Missile Applications," 58-32 dated 14/11/2018, RCI, Hyderabad Rs. 18.6 Lakhs

**Dr. V. V. Mani, and Dr. Rahul J. Pandya, et. al.,** " VLC-Based Vehicular Communication for enhancing Road Safety in Smart Cities," SPARC, Rs. 69 Lakhs.

**Dr. V. V. Mani and Dr. V. Vasu,** "Indigenous test bed for Industry 4.0 using Visible Light Communication with Industrial Internet of Things," ASEAN-India Science, Technology & Innovation Cooperation (AISTIC), Rs. 70.00 lakhs.

**Dr. J. Ravi Kumar,** "Design and implementation of fractional order PID controller for industrial applications using IoT," DST/ICPS/CPS-Individual/ 20181433(C) and 18-12-2018, Rs. 35 Lakhs.

**Dr. Gande Arun Kumar,** "Design and Development of a W-band Front-end for Imaging Applications using Silicon-Germanium Technology," ECR/2018/ 002390 dated 14/03/2019, Rs. 37.5 Lakhs.

**Dr. B K N Srinivasa Rao,** "Programmable Electronic Jacquard Machine for complex designs in Handloom sector," SRG, Rs. 22.5 Lakhs.

**Dr. Chayan Bhar,** "Design of a Multi-operator Telecommunication Network to support

Heterogeneous Services using Network Slicing," RS-1016-GOT-SERB-SRG-Dr.Chayan Bhar, ECE-MC-SERB, 5.11.2020

**Dr. Amarjit Kumar,** "Wireless Health Monitoring of Ripened Fruits and Vegetables in Cold-Stores," P1114-Plan-Gen. RSM , Dt. 04 Dec 2020, Research Seed Money-NITW , Rs. 4.9 Lakhs

**Dr. Chayan Bhar,** "Design of Network Slicing Strategies to Support Heterogeneous Quality-of-Service Requirements," P1112-Plan-Gen. RSM , Dt. 04 Dec 2020, Research Seed Money-NITW, Rs. 4.8 Lakhs

**Dr. Ekta Goel,** "Performance optimization of Tunneling Finfets," P1113-Plan-Gen. RSM, Dt. 04 Dec 2020, Research Seed Money-NITW, Rs. 4.9 Lakhs.

### Consultancy work details

**Dr. Damera Vakula and Dr. Gande Arun Kumar,** "Modelling and Simulation of Wide-band Vivaldi Antenna Array for UAV Applications", UTS-PO/2020-21/NITW/264, 22 Oct 2020 UTS, Hyderabad, Rs. 1.00 Lakh.

### Patents (Filed, Published, Granted and Licensed)

#### a. Filed

**Dr. B.K.N. Srinivasarao,** Kalluru Vasanth Reddy, Dr. E. Suresh Babu, Dr. Injeti Satish Kumar, Electronic Jacquard Machine for Handloom Sector, Application No: 202141041502, (Filed, 15/09/2021).

**Mohamamd Farukh Hashmi,** A System for Prediction and Alert Of Local Rainfall For Tribal Areas Using Ai And IoT, Application No.202141027509 A, (Filed, 09/07/2021).

#### b. Published

NIL

#### c. Granted

**V.Rama, CB Rama Rao,** Swaraj Nikil, Santosh, Vidya, "A tele-health care system and method for early disease detection," Australian Patent No. 20211105599

#### d. Licensed

NIL

## Books and Book Chapters

Anil Kumar Tipparti, and **Prof. L. Anjaneyulu**, "Advanced Aspects of Engineering Research", Vol.14, 20 May 2021, Page: 104-111.  
<https://doi.org/10.9734/bpi/aaer/v14/3895D>. **Published:** 2021-05-20

**Prof L. Anjaneyulu**, and TV Anil Kumar, Implementation of Best Hybrid Adaptive and Intelligent MIMO Detector on Reconfigurable Architecture for 5G LTE/IoT Environment, Pages 49-56, Chapter 25, Springer Book Series, Smart Trends in Computing and Communications: Proceedings of SmartCom 2020, ISBN 978-981-15-5224-3, DOI 10.1007/978-981-15-5224-3

**M.V. Raghunadh, Dr. N. Bheema Rao**, "A compact IPD based on chip Band Pass Filter for 5G Radio Applications," In: T. Laxminidhi, Prof. Jyoti Singhai, Dr. Sreehari Rao Patri, V. V. Mani (eds) Advances in Communications, Signal Processing, and VLSI, Lecture Notes in Electrical Engineering. Springer, Singapore. DOI: 10.1007/978-981-33-4058-9

**S K L V Sai Prakash and N Bheema Rao**, "An Iterative Node-Pair Time Synchronization (INTS) for Wireless Sensor Networks," Book Chapter: Electronic Systems and Intelligent Computing, 2020, Springer, Scopus

**S K L V Sai Prakash and N Bheema Rao**, "K-Hop Iterative Time Synchronization Over a Linear Connected Wireless Sensor Networks," Book Chapter: Smart Computing Techniques and Applications, 2021, Springer, Scopus

K. V. Sai Kiran, Mohamed Azman, Eslavath Nandu, and **S. K. L. V. Sai Prakash**, "Real-Time Detection and Prediction of Heart Diseases from ECG Data Using Neural Networks," Advances in Intelligent Systems and Computing book series (AISC, volume 1245), 2020, Springer, Scopus

**Dr. Mohammad Farukh Hashmi**, "Voice-Controlled Biped Walking Robot for Industrial Applications", in Innovations in the Industrial

Internet of Things (IIoT) and Smart Factory, IGI Global, ISBN: 9781799833758.

Pavitra, B., D. Narendar Singh, and **Mohamamd Farukh Hashmi**. "Voice-Controlled Biped Walking Robot for Industrial Applications." In *Innovations in the Industrial Internet of Things (IIoT) and Smart Factory*, pp. 79-92. IGI Global, 2021. (Scopus Indexed)

Swain, M., Singh, R., Gehlot, A. and **Hashmi, M.F.**, "LoRaWAN: A Communication Protocol for IoT Agriculture Applications". In *LoRA and IoT Networks for Applications in Industry 4.0*. Nova Science Publishers, 2020.

Swain, M., Singh, R., **Hashmi, M.F.**, and Gehlot, A., "An IoT Enabled Integrated Framework for Solar Energy Harvesting in Wireless Sensor Nodes over LoRa". In *Energy Harvesting Technologies for Powering WPAN and IoT Devices for Industry 4.0 Up-Gradation*. Nova Science Publishers, 2020

**Kalpana Naidu**, et al. (2021) "**Optimal Resource Allocation Based on Particle Swarm Optimization**." In: T. Laxminidhi, Prof. Jyoti Singhai, Dr. Sreehari Rao Patri, V. V. Mani (eds) Advances in Communications, Signal Processing, and VLSI, Lecture Notes in Electrical Engineering. Springer, Singapore. DOI: 10.1007/978-981-33-4058-9 17.  
( <https://www.springerprofessional.de/en/optimal-resource-allocation-based-on-particle-swarm-optimization/19058988> )

**Kalpana Naidu**, et al. (2021) "**Automated Bayesian Drowsiness Detection System Using Recurrent Convolutional Neural Networks**." In: T. Laxminidhi, Prof. Jyoti Singhai, Dr. Sreehari Rao Patri, V. V. Mani (eds) Advances in Communications, Signal Processing, and VLSI, Lecture Notes in Electrical Engineering. Springer, Singapore. DOI: 10.1007/978-981-33-4058-9 30.

Akash Tyagi, Bijit Biswas, **G. Arun Kumar**, Biplob Mondal, "Design and Simulation of a Dual Band Radiometer for Humidity and Temperature Profiling", in *Advances in Communications, Signal Processing, and VLSI*, Editors: T. Laxminidhi, Jyoti Singhai,

Sreehari Rao Patri, and V. V. Mani, Springer, Singapore, Vol: 722, Chapter-8, pp: 83-90, 2021. DoI: <https://doi.org/10.1007/978-981-33-4058-9>.

Akash Tyagi, Bijit Biswas, **G. Arun Kumar**, Biplob Mondal, "Design and Simulation of a W-band FMCW Radar for Cloud Profiling Application", in Advances in Communications, Signal Processing, and VLSI, Editors: T. Laxminidhi, Jyoti Singhai, Sreehari Rao Patri, and V. V. Mani, Springer, Singapore, Vol: 722, Chapter-18, pp: 213-218, 2021. DoI: <https://doi.org/10.1007/978-981-33-4058-9>.

### Conferences, workshops, FDPs, Webinars organized

**Dr. B. Lakshmi**, Associate Professor, ECE, Dr. C. Vanitha, Associate Professor, MME, Dr. Kusum Kumari, Assistant Professor, Physics, Dr. B. Spoorthi, Assistant Professor, HSS, organized an International Conference on "Women Empowerment in Science and Technology (ICWEST-2021)" (Virtual Mode) on the occasion of International Women's Day 08-10 March 2021 sponsored by TEQIP III.

**Dr. B. Lakshmi** organized a 10 day FDP on "ASIC Design: Low Power Perspective" for Faculty (61), E&ICT, 01-07-2021 to 10-07-2021

**Dr. B. Lakshmi**, Dr T. L.Narayana organized a 10 Day FDP on "AWS & Machine Learning" for Faculty (55), E & ICT, 04-10-2021 to 13-10-2021

**Shri. S K L V Sai Prakash** organized a ten Day Online Student Training Program on Future Skill Technologies - Internet of Things (IoT), for Students (75) , TEQIP III, 27- 07-2020 to 05-08-2020

**Dr.B.K.N.Srinivasarao** and Dr.E.Suresh Babu organized a Faculty development program on "Machine Learning for IoT Applications" for faculty (30), CCE, NITW, 07-09- 2020 to 11-09-2020

**Dr. Maheshwaram Satish**, Dr.Gaurav Trivedi, PN Kondekar, Amit M Joshi, Bharat Gupta, jointly organized a FDP on System Design Methodologies for Embedded, IoT, AI, & HPC using Intel FPGA,E&ICT,19- 04-2021 to 30-04-2021.

**Dr. Maheshwaram Satish**, Dr. Naresh T, Dr. Thyageshwar C, Prof. A. Ramachandraiah organized a 6 Day FDP on "Content Preparation and Delivery for Online Mode of Teaching (CPDOMT)" for faculty (34), TLC, 05-10-2020 to 10-10-2020.

**Dr. Maheshwaram Satish**, Dr. Gaurav Trivedi, Prof. PN Kondekar, Dr. Amit M Joshi, Dr. Bharat Gupta organized a 2 week program on "System Design Methodologies for Embedded, IoT, AI, & HPC using Intel FPGA" for faculty (Overall India ~600+) , E&ICT, Intel, 19-04-2021 to 30-04-2021.

### Guest Talks/webinars delivered

**Prof. Lokam Anjaneyulu**, "Design and analysis of advanced antenna systems," at Vardaman college of engineering during 23-28August 2021

**Dr. A Prakasa Rao**, "Optimization Techniques in 5G," Sri Indu Institute of Engg and Tech., on 11/06/2021

**Dr. A Prakasa Rao**, "Optimization Techniques in Antennas," AICTE-STTP-II-SVECW-Bhimavaram on 26/08/2020

**Dr. D. Vakula**, "Antennas for 5G communications," Vignan Institute of engineering for women VSKP on 15-07-2021

**Dr. D. Vakula**, "Research on metamaterial used in defence applications," AICTE online STTP BVRIT Hyderabad on 23-11-2020

**Dr. D. Vakula**, "Research on metamaterial used in defence applications," AICTE online STTP BVRIT Hyderabad on 12-12-2020

**Dr. D. Vakula**, "Research on metamaterial used in defence applications," AICTE online STTP BVRIT Hyderabad on 12-10-2020

**Dr. D. Vakula**, "Antenna Fundamentals," AICT sponsored STTP AitamTekkli on 27-07-2020

**Dr. D. Vakula**, "Mathematical solvers for antenna design," AICT sponsored STTP AitamTekkli on 07-09-2020

**Dr. D. Vakula**, "Metamaterial antennas," Department of KLEF and IETE Vijayawada centre on 16-07-2020

**Dr. D. Vakula**, "Basics of reconcilable antennas," VRSEC Vijayawada on 20-07-2020

**Dr. D. Vakula**, "Massive mimo devices and circuits," Atal FDP, saranadha college of engineering Trihi on 09-06-2021

**Dr. D. Vakula**, "Antennas for 5G communications," VRSEC Vijayawada, AICTE FDP on 17-09-2020

**Dr. D. Vakula**, "Metamaterial antennas," Sri Vishnu college of engineering for women ,Vijayawada on 27-07-2020

**Dr. D. Vakula**, "Applications of ANN in communications system," Geetham Institute of technology Vishakapatnam on 31-07-2021

**Dr S Anuradha**, "Fading channels and LDPC codes," AICTE Sponsored One Week Online STTP on "Recent Advances in Wireless Communications & Future Challenges" - Vardhaman College of Engineering (A), Hyderabad on 17th July 2020

**Dr S Anuradha**, "Error Coding Techniques in 5G Communications," one day Guest Lecture, Amritha School of Engineering, Chennai Campus on 28th August 2021

**Dr S Anuradha**, "FT and its properties," one day Guest Lecture, G H Raison Institute of Engineering & Technology, Nagpur on 9/10/2021

**Dr S Anuradha**, "Spatial Modulation Techniques," AICTE Sponsored One Week Online STTP on "Hands on project based approach for 5G design and development using MATLAB" - KITS College (A), Warangal on 22/01/2021

**Dr. Kalpana Naidu**, "Resource allocation in Heterogeneous Networks", at NIT Andhra Pradesh on 17/11/2020.

**Dr. Kalpana Naidu**, "Cognitive Radio and SDR", at Vardhaman College of Engg. Hyderabad, on 15/07/2020.

**Dr. Kalpana Naidu**, Heterogeneous Networks (HetNets) Vignan's deemed University Guntur, 4th Sep 2021 in ICVSComs-2021 International conference

**Dr. Gande Arun Kumar**, "RF Receiver architectures", at Vardhaman College of Engg. Hyderabad, on 08/10/2020.

**Dr. Gande Arun Kumar**, Microstrip patch antenna design and reconfigurability using HFSS Two day workshop on Microwaves, antennas and electromagnetic fields at G.Pulla Reddy College of Engineering, Kurnool 07th August, 2021

**Dr. Gande Arun Kumar**, Millimeterwave front-end and component design FDP on Recent Trends in Wireless Communication (E&ICT Academy) 13th Oct., 2021

**Dr. Gande Arun Kumar**, Microwave front-end design for mobile handset FDP on 4G/5G Technologies (E&ICT Academy) 13th Sept., 2021

**Dr.B.K.N.Srinivasarao**, "Network on Chip," at VVIT Guntur on 20th July 2020

**Dr.B.K.N.Srinivasarao**, "SoC and NoC architectures," SBTET Andhra Pradesh on 20th Aug.2020

**Dr.B.K.N.Srinivasarao**, "Fundamentals of Machine Learning Algorithms," at VVIT Guntur on 30th Nov 2020

**Dr.B.K.N.Srinivasarao**, "Network on Chip architectures," MVSR college of Engineering on 8th Nov 2020

**Dr.B.K.N.Srinivasarao**, "SoC-ARM CORTEX Architecture and programming examples" at MVSR college of Engineering on 23rd Nov 2020

**Dr.B.K.N.Srinivasarao**, "Machine Learning for IoT," at GEC Gudlavalleru on 10th December 2020

**Dr. Md. Farukh Hashmi**, Invitation as Expert on Fundamentals of TV engineering and Composite Video Signals Department of ECE, GHRIET, Nagpur (M.H.) 18 and 25 September 2021

**Dr. Md. Farukh Hashmi**, Computer Vision and Its Applications Department of CSE, R.V.R. & J.C. College of Engineering, Guntur (A.P.) 29 September 2021

**Dr. Maheshwaram Satish**, "Future Nano Electronic Devices and Circuits," MGIT, Hyderabad (Online) during 06-08 July 2020

**Dr. Maheshwaram Satish**, "Recent Trends in Nanoelectronic Devices," Anurag University, Hyderabad (Online) during 13-15 July 2020

**Dr. Maheshwaram Satish**, "Learning Management System (LMS) with MOODLE," Teaching Learning Centre (TLC), NIT Warangal (Online) during 14 -17 (Batch-I), 21 - 24 (Batch-II), 28 -31 (Batch-III) July 2020"

**Dr. Maheshwaram Satish**, "Student training program on Future Skill Development - Internet of Things (IoT)," TEQIP III, NIT Warangal (Online) on 30 July 2020

**Dr. Maheshwaram Satish**, "VLSI Design Tools, Techniques and Applications," EICT, NIT Warangal & Vishnu Institute of

Technology, Bhimavaram (Online) on 10 August 2020

**Dr. Maheshwaram Satish**, "Advancements in Signal Processing and Communication Technologies," SBTET, Govt. of A.P (Online) on 21 August 2020

**Dr. Maheshwaram Satish**, "System on Chip Design – Basics to Development of Chips," AICTE & MVSR Engg. College (Online) on 09 November 2020

**Dr. Maheshwaram Satish**, "Trends for Industry 4.0 Beyond 2020 | Electronics Engineering Perspective," J.C.Bose University of Science and Technology, Faridabad (Online) on 18 March 2021

**Dr. Prakash Kodali**, Webinar talk on "New Frontiers of Bioelectronics & IoT" date 12-06-2021 at Department of Electrical Electronics & Telecommunication Engineering, DRIMES POLYTECHNIC College, Tangi, Cuttack, Odisha.

**Dr. Prakash Kodali**, Invited lectures for the STTP sponsored by AICTE - FDP titled "Recent Trends in VLSI Nanoelectronics for IoT Applications" dated on 26-3-2021 to 27-3-2021 in Department of Electronics and Communication Engineering, Malla Reddy College of Engineering, Hyderabad.

**Dr. Amarjit Kumar**, Realization of microwave/Millimetre-wave/THz devices for 5G wireless communication technology, Electronics & ICT Academy, NIT Warangal Date- 08.08.2021, Time: 3 PM - 5PM

**Dr. Ekta Goel**, "Short Channel Effects and their remedies for advanced Nano scaled MOS devices" at Guntur, Andhra Pradesh on 16/12/2020.

**Dr. Ekta Goel**, "Short Channel Effects and their Remedies for Advanced Nano Scaled MOS Devices," Faculty Development Program on TECHNOLOGY COMPUTER AIDED DESIGN: SIMULATION FOR VLSI DEVICES, CIRCUITS AND SYSTEMS at IIIT, Noida during 20th-25th July, 2020

**Dr. Ekta Goel**, "Advanced Semiconductor Devices, modeling and simulation Faculty Development Program on Modeling, Simulation & Fabrication of Futuristic Semiconductor, MEMS and NEMS Devices," at K L E F, Deemed to be University, Guntur District, A.P. during 14th to 19th December 2020

**Dr. Ekta Goel**, "Design and Simulation of Advanced Nanoscaled CMOS Devices for Low Power Applications," TEQIP III Sponsored One Week Online Short Term Training Program on "Design and Fabrication of VLSI Circuits" during 01 March 2021 to 05 March 2021.

**Dr. Chayan Bhar**, "Drone base stations for 5G and beyond", STTP on AI and 5G Communication Technology, 07/12/2020.

**Dr. Chayan Bhar**, "Technical talk on Next Generation communication: A Network Designer's Perspective", Vasavi College of Engineering, Hyderabad, 28/05/2021.

**Dr. Vasundhara**, "Signal Processing for Hearing Aid Design," TEQIP-III Sponsored one week short term training program on Recent Trends in Signal Processing: Theory and Applications, organized by UCE Bikaner during 26-30th August, 2020.

**Dr. Vasundhara**, "Smart Hearing Aids, "Faculty development program on Machine Learning and Smart Electronic System, organized by SKIT Jaipur during 03-05 September, 2020.

**Dr. Vasundhara**, "Machine Learning for Adaptive Health Care Systems," TEQIP-III Sponsored Two Days Online Workshop on Recent Advances in Artificial Intelligence by VSSUT Burla during 11th – 12th Sep 2020.

**Dr. Vasundhara**, "Optimisation techniques for adaptive controllers in acoustic applications," TEQIP-III Sponsored Two Days Online Workshop on Advancement of Optimization Techniques in Electrical Engineering Applications on 14th – 15th Sep 2020, organized by VSSUT, Burla during 14-15th sept, 2020.

**Dr. Vasundhara**, "Machine Learning for Adaptive Health Care Systems," Faculty development program on Advanced Digital Signal Processing in association with IEEE signal processing society Madras section, organized by VIT, Vellore on 05-04-2021

### **New lab established/ Equipment and Software procured**

**Dr. P Muralidhar** initiated talks with ARM limited and ARM Limited has donated 180 MDK Keil Licenses to Microcontrollers & Embedded Systems Lab for online Labs, worth USD 6,84,000 approx. Rs 5.0 crores



**Dr. Maheshwaram Satish,** AICD Lab Workstation- Camarero SS400TR, Tyrone, Rs. 2,25,420, Workstation for simulation Purpose, NITW-MHRD-RSM, 2019.

**Dr. Maheshwaram Satish,** AICD Lab "VTCADPA Semiconductor Device Simulator - 4 way Parallel Computation VPTKLA Energetic Particle Monte-Carlo Simulator " Visual TCAD Cogenda, Rs. 4,14,750, Software for simulation Purpose, NITW-MHRD-RSM, 2019.

**Dr.B.K.N.Srinivasarao,** Electronic Circuits Lab 3D Printer 3 Ding Hydra 250, Rs. 1,62,750.00, 3D Printing using PLA material, SERB, 2021.

### Awards/ Recognitions/ Achievements

**S K L V Sai Prakash and N Bheema Rao,** Received Best Paper award for the paper titled "K-Hop Iterative Time Synchronization over a Linear Connected Wireless Sensor Networks" at 4th International Conference on Smart Computing and Informatics, Springer Nature and SCI 2020, and awarded a gift voucher for the value of EUR 200 (two hundred euros).

**Dr. S. Anuradha** chaired a session at International conference VCAS-2021 held at MNNIT, Allahabad during 24-26 Sep 2021.

**Dr. Atul Kumar Nishad** received best paper award for the paper titled "First Principle Analysis of Os-passivated Armchair Graphene

Nanoribbons for Nanoscale Interconnects" published in a very reputed conference named "20th IEEE International Conference on Nanotechnology (IEEE-NANO)" , Montreal, QC, Canada.

**Dr. Md. Farukh Hashmi** chaired a session at International conference GCAT-2021 held at Nagarjuna College of Engineering and Technology, Bengaluru By IEEE Bangaluru Section during 1st -3rd October, 2021

**Dr. Ekta Goel,** "Selected as Primary Evaluator for Toycathon 2021," by Ministry of Education, 2020-2021

### PhD Research guidance (Completed during the academic year)

12 full time students and 4 part time students have completed their PhD's during the 2020-2021.

### Best student papers and other achievements

**Raghu Vamshi Hemadri,** Praveen Kumar Pokala, Chandra Sekhar Seelamantula, "Iteratively Reweighted Minimax-Concave Penalty Minimization for Accurate Low-rank Plus Sparse Matrix Decomposition," IEEE Transactions on Pattern Analysis and Machine Intelligence, 10.1109/TPAMI.2021.3122259, 2021

### Details of students joined in higher educational institutes

S. No.	Name of the Student	Department	Placement Details
1	Dhruv Banala	ECE	Evosys
2	Archie Gupta	ECE	Qualcomm
3	Ashutosh Bhatta	ECE	O9 Solutions
4	B Snigdha Reddy	ECE	Yodlee
5	Venkata Chandini Bhanavathu	ECE	Silabs
6	B D Dehith	ECE	Tetcos llp
7	Daravathu Geethika	ECE	Qualcomm
8	Sidhartha Dulam	ECE	Amdocs
9	Harsh Anand	ECE	Lentra AI

10	Raghu Hemadri	ECE	Oracle
11	Stheya Julakanti	ECE	Qualcomm
12	Shashank Kanamarlapudi	ECE	Byju's
13	Karnekanti Srikanan	ECE	Byju's
14	Koripella Naga Surabhi	ECE	CITI Bank
15	Sai Kiran Kourike	ECE	Innominds
16	Maddala Durga Prasad	ECE	Qualcomm
17	Manthan Mitesh Tolia	ECE	OnePlus
18	Masadi Sairam	ECE	PlanetSpark
19	Ajith Kumar	ECE	Blackbuck
20	Mohit Tripathi	ECE	MasterCard
21	Mukul Verma	ECE	Edgeverve systems
22	Anas	ECE	L&T Infotech
23	Vishnu Vardhan Nimmalapudi	ECE	Deutsche Bank
24	Padamata Sai Harini	ECE	Wipro
25	Ps Vishnu Teja	ECE	Edgeverve systems
26	Adarsh Sanjay Patil	ECE	Amdocs
27	Uday Kumar Patnana	ECE	Qualcomm
28	P Jyoti	ECE	Byju's
29	Jethin Chandra Pilli	ECE	Standav
30	Prajay Radharapu	ECE	BRIDGEi2i Analytics
31	Rajidi Puneeth Reddy	ECE	OnePlus
32	Rallapalle Gayathri Chowdary	ECE	Goldman Sachs
33	Rayaluru Akshay	ECE	Qualcomm
34	Rohan Ayyagari	ECE	L&T Infotech
35	Samarth Singhal	ECE	Microsoft
36	Shaik Abubakar Siddiq	ECE	Byju's
37	Nikhath Shaikh	ECE	Apple
38	Shweta Shinde	ECE	Oracle
39	Shubham Kumar Singh	ECE	Broadridge
40	Siddarth Chintalapati	ECE	Novartis Healthcare
41	Somya Bhatnagar	ECE	Qualcomm
42	Varun Swamy	ECE	Edgeverve systems
43	Dinesh Koushik Takasi	ECE	Modak Analytics
44	Talluri Kousik	ECE	Amdocs
45	T. Sathvika Sagar	ECE	Strand Life Sciences
46	Thangallapally Shirisha	ECE	Qualcomm
47	Thota Giri Sai Reddy	ECE	BEL
48	Tummala Sandesh Reddy	ECE	Amdocs
49	Tejashwini Vankalagaddi	ECE	Cloudera
50	Sai Charan Vemula	ECE	Amagi
51	Vinod Gundlathoti	ECE	Innominds
52	Vittanala Jaya Ramakrishna	ECE	Edgeverve systems



53	Y Sindhu Sri	ECE	Oracle
54	Harshith Yerra	ECE	Leoforce
55	Aditya Bhonsle	ECE	L&T Infotech
56	Anshika Srivatsava	ECE	Oracle
57	Ayushi	ECE	Qualcomm
58	Bandigi Rohith Kumar	ECE	Kagool
59	Bhagan Ram	ECE	Edgeverve systems
60	Barath Choudhary	ECE	Oracle
61	Boddu Umesh Chandra	ECE	Innominds
62	Akshith Chennuri	ECE	Wipro
63	Divya Pamidi	ECE	American Express
64	Gangishetti Kavya Sri	ECE	Qualcomm
65	Harish Patidar	ECE	Radisys
66	Harsha Vardhan Koganti	ECE	Western Digital
67	Ram Prabodh Induri	ECE	Servicenow
68	Siva Amrutha Jyosyula	ECE	Tata Steel
69	K. Vasanth Reddy	ECE	Qualcomm
70	Praneeth Reddy Kunduru	ECE	Publicis Sapiient
71	L Akhil Bharadwaj	ECE	Analog Devices
72	M. Kavya	ECE	Qualcomm
73	Gunasekhar Matta	ECE	Kagool
74	Mohammad Mohsin Ahmed	ECE	Micron Technology
75	Mujavar Sameer Ahmed	ECE	Deloittee
76	Mulka Sai Chandu	ECE	Edgeverve systems
77	Nandigama Sai Shashank	ECE	American Express
78	Nikhat Shabnam	ECE	Qualcomm
79	Nilesh Maurya	ECE	Netcracker
80	Nitesh Kumar	ECE	Chubb
81	Sushma Devi Pasumarthi	ECE	Deloittee
82	Bhanu Teja Perumandla	ECE	Thoughtworks
83	Pradeep Kamal	ECE	BRIDGEi2i Analytics
84	R Rama Krishna	ECE	BEL
85	Rajesh Kumar Swami	ECE	Edgeverve systems
86	Rajshree	ECE	ACT Fibre
87	Rishab Jain	ECE	Blueyonder
88	Kottam Sai Kiran Reddy	ECE	Radisys
89	Sappa Ajay Babu	ECE	Zenoti
90	Bilal Shaik	ECE	Amdocs
91	Shobhit Patidar	ECE	L&T Infotech
92	Shyamal Aravind	ECE	BNY Melon
93	Sirendra Dasari	ECE	L&T Infotech
94	Surigi Hemachander	ECE	Inforsystems
95	Swetha Paturu	ECE	L&T Infotech

96	Tadikonda Srivatsava	ECE	tredence analytics
97	Talla Saidev	ECE	Amdocs
98	Tanumon Roy	ECE	WELLS FARGO
99	T Ruthvik Reddy	ECE	Edgeverve systems
100	Udit Mehrotra	ECE	CITI Bank
101	Varakantham Shiva Reddy	ECE	Truechip
102	Venkat Narayan.G	ECE	HCL
103	Vishav Kapahi	ECE	Oracle FSS
104	Tarun Yaramala	ECE	ZS
105	Yash Deshmukh	ECE	Blackbuck

S. No	Name of the Student	Department	Higher studies
1	K Aditya Sai	ECE	M. Tech. at IIT Bhubaneshwar
2	Siddarth Chintalapati	ECE	MS at CU, Boulder
3	Sruthi Rajesh	ECE	MS at Arizona State University
4	Ayushi	ECE	M. Tech, IIT Kharagpur
5	K. Nikhil	ECE	M. Tech, NIT Warangal
6	P. Sushma Devi	ECE	MBA, Pennsylvania State University

### Department Outreach Activities

**Dr. B.K.N.Srinivasarao** audited the Academic activities of Dept. of Electronics and Instrumentation, VR Sidhartha Engineering College, Vijayawada On 17/09/2021 as External Academic Audit Member.

**Dr. Mohammad Farukh Hashmi** Ph.D. Oral Viva Examinations Expert, Centre of Research, Anna University Chennai. On 20/09/2021

### Department Association/Students Clubs Activities

IEEE Microwave theory and techniques student branch chapters and Circuits and systems student branch chapters have been formed

MTT Student organized two webinars and a DMI workshop

1. Dr. Sandeep Chaturvedi, "IEEE Student Membership Benefits" on 12/09/2021
2. Dr. Pragnan Chakravarthi, "Microwave Devices for Next Generation Wireless Communication" on 29/10/2021
3. DMI lectures to UG and PG students by Prof.Maurizio Bozzi, University of Pavia, Italy and Prof. Quan Xue, South China University & Technology, China on 26/11/2021

ECE Association organized the following

1. Digital arms race on 01/09/2021 by Mr. Ajinkya Lohakare
2. Hardware weekend during 11-12<sup>th</sup> September

3. Online content for Intern placement series
4. Shell Scripting workshop on 19/09/21 by Sitanshu Shukla and Saketh Amargani
5. All about CAT webinar on 26/09/2021 by Mr. Goldy Admane, Mr. Preetam Kumar and Mr. K. Madhusudhan
6. Online content for Cognizance Serie.
7. Battle of memes on 15/10/2021
8. TechFlix- Virtual Techno Cultural Fest during 22/10/2021 to 25/10/2021
9. UPSC talk on 30/10/2021 by Mr. Subhankar Bala
10. Webinar on "How to Secure Dream Jobs in the US" on 02/11/2021 in collaboration with The Indian Conclave, Speakers from George Washington University.
11. Codeforces Gym ongoing

### Any other Department Specific

**Highlights of the department** (Research, state of art equipment, facilities, innovative practices etc. With photographs)



**Research Highlight:** A low cost touchless sanitizer dispenser has been developed by V Sudhakar, a technical assistant in the Electronics and Communication Engineering (ECE) department at National Institute of Technology, Warangal (NITW). The sanitizer is designed in two versions: table top and wall mounted for usage in offices and public places. The sanitizer dispenser is based on the ultrasonic sensor microcontroller and LED solenoid theory, it can be made available for just Rs 800 while other products with the same specifications in the market are priced at Rs 2,000.

**Research Highlight:** A low-cost foot-operated sanitiser dispenser with waste material has been developed by V Sudhakar, a technical assistant in the Electronics and Communication Engineering (ECE) department at National Institute of Technology, Warangal (NITW). The foot-operated sanitiser stand costs less than Rs 300. It is made of waste PVC pipes.



Manpower Development Programme (SMDP) for Chip to Systems, an "ON CHIP Powermanagement solution" for mobile applications was designed under the supervision of Dr. Sreehari Rao Patri of ECE Department and the Chips were fabricated by UMC technology, Belgium. This integrated circuit has the potential to provide a robust regulated power to mobile gadgets.

A patent has been granted on A tele-health care system and method for early diseasedetection to **Dr. V. Rama, Prof. C. B. Rama Rao**, Swaraj Nikil, Santosh, Vidya,



Dr BKN Srinivasa Rao, Asst Professor was sanctioned a DST SERB project worth Rs 22 Lakhs, The Field test and Integration of "Programmable Electronic Jacquard Machine for complex designs in Handloom sector" has been performed and a patent has been filed.

## Summary

(June 1, 2020-May 31, 2021)

S.No.	Activity	Number
1	Publications (Peer Reviewed Journals/ conferences)(SCOPUS/SCI)	
	<i>International Journals</i>	92
	<i>National Journals</i>	03
	<i>International Conferences</i>	23
	<i>National Conferences</i>	02
2	Funded Research Projects/SPARC projects (2020-21)	
	Completed Projects	0
	Ongoing Projects (Rs 3.364 Crores)	16
	Ministry of Mines Project (Rs. 18.63 Lakhs)	01
	SPARC PROJECTS (69 Lakhs + 45 Lakhs)	02
	ASEAN-India Science, Technology& Innovation Cooperation(AISTIC)(70Lakhs)	01
	TARE (18.3 Lakhs)	01
	DST, SERB (35 Lakhs+37.5 Lakhs+22.5 Lakhs+9.00 Lakhs+11.5 lakhs)	05
	DRDO projects (9.8 Lakhs+18.6 Lakhs)	02
	Seed grant projects	04
3	SPARC Project Workshops	NIL
4	Consultancy Works (2020-21)	01
5	Patents	03
	Awarded	01
	Filed	02
6	Books and Book Chapters	14
	Books	0
	Book Chapters	14
7	Conferences/ Workshops/GIAN courses/FDPs Conducted	08
8	Guest talks/ Webinars delivered	56
9	New Labs Established (Equipment/Software Procured)	04
10	Awards/Recognitions/Achievements	05
11	Research Guidance (Completed in 2020-21)	16
12	International Visits of the Faculty Members/ students	0
13	Students Achievements	
	Placements	
	B.Tech (avg. Sal.: 14.49Lakhs)	105
	MTech (avg. Sal.: 16.37Lakhs)	38
	Lab Development Activities	0
	Conference visits	0
14	ECE Association Activities	11
15	IEEE Activities – Student Branch Chapters -New	3
16	Distinguished Guests visiting the Department/Delivering Expert Lecture/Keynote Address	0
17	Outreach Programmes	2




# DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING

## Brief History of the Department, Academic Programs




The Metallurgical Engineering Department of NIT, Warangal was found in the year 1965. The third and final year students (5 each) of B. Tech program are supported by Ministry of Steel Scholarship. In the last academic year, the IV B. Tech students have got placement opportunities in core companies such as Reliance Industries Limited, Vedanta, Essar Steel India Ltd., JCB etc. along with software and finance management companies. Ms. Vidisha secured First Rank in GATE 2020 and in fact, every year 5 to 10 students qualify in GATE with ranks less than 300. In case of M. Tech students, few got campus placements and few others got off-campus job offers along with PhD admissions in IITs. About 39 research scholars are currently pursuing their PhD in the department. The department has been part of National Mission Project on developing Advanced Ultra Supercritical (AUSC) technology for the country. Currently about Rs. 1.6 crores worth of research projects are being carried out in the department. Some of the major research funding organisations are DAE-BRNS, DST-SERB, UGC-DAE-CSR, ARDB, NTPC-NETRA, AUSC, ISRO, and DRDO.



## Faculty Details:

S. No.	Name of the Faculty Member and Designation	Highest Qualification	Research Interests	Photograph
1.	Dr. Asit Kumar Khanra Assoc. Professor & Head	Ph. D	Powder Metallurgy, Processing of Advanced Ceramics, Biomaterials	
2.	Dr. G. V. S. Nageswara Rao Professor (HAG)	Ph. D	Powder metallurgy, Surface Engineering, Materials Testing and Characterization	
3.	Dr. N. Narasaiah Professor	Ph. D	Mechanical Behaviour of Materials, Fatigue, Fracture Mechanics, Failure Analysis	
4.	Dr. C. Vanitha Associate Professor	Ph. D	Physical Metallurgy, Texture, Nuclear Materials, Light Metals & Alloys, Corrosion	
5.	Dr. T. Mahesh Kumar Associate Professor	Ph. D	Metal Joining, Additive Manufacturing, High Temperature Materials	



6.	Dr. N. Kishore Babu Associate Professor	Ph. D	Metal Joining, Additive manufacturing, nanocomposites	
7.	Dr. Brahma Raju Golla Asst. Professor Grade-I	Ph. D	Ultra High Temperature Ceramics, Advanced Materials Processing, Tribology	
8.	Dr. B. Srinivasa Rao Asst. Professor Grade-I	Ph. D	Process- Microstructure-Property Relationship, Nanocrystalline Materials	
9.	Dr. Ajoy Kumar Pandey Asst. Professor Grade-I	Ph. D	Mechanical Metallurgy, Bio-Ceramics, Powder Metallurgy	
10.	Dr. R. Arockia Kumar Asst. Professor Grade-I	Ph. D	Shape Memory Alloys, Friction Stir Processing, Physical Metallurgy, Severe Plastic Deformation	
11.	Dr. V. Sreedevi Asst. Professor Grade-II	Ph. D	Synthesis and Characterization of Bulk Nanocrystalline Materials	

12.	Dr. V. Rangadhara Chary, Asst. Professor Grade-II	Ph. D	High Performance Structural Ceramics, High Entropy Alloys Phase Transformations	
13.	Dr. Uma Maheswara Rao S Asst. Professor Grade-II	Ph. D	Non-equilibrium Processing of Materials, Advanced Characterization, Magnetic Materials	
14.	Dr. Y. Raghupathy Asst. Professor Grade-II	Ph. D	Applied Nanomaterials and Coatings, Corrosion Engineering	
15.	Dr. Sukla Mondol Asst. Professor Grade-II	Ph. D	Alloy development, light alloys, Microstructural characterization, TEM	

## Journal Publications

Sudarshan Kumar, Srishti Ramteke, Shailaja Chelika and **C. Vanitha**, Creep behaviour of Al-Si-Mg alloy by hot impression creep test, *Materials today: proceedings*, 2020

Saijyothi Nagireddi, D. Arvindha Babu, **B. Srinivasarao**, Bhaskar Majumdar Processing of Hf based bulk metallic glass through Spark Plasma Sintering (SPS) process, *Journal of Alloys and Compounds*, 876, 2021, 160057

Shiven Ponnappureddy, Aritra Sarkar, A. Nagesha, N. Narasaiah, **B. Srinivasa Rao**, A re-visit to the Haigh diagram with the effect of creep damage on the high cycle fatigue behavior of alloy 617M, *International Journal of Fatigue*, 149, 2021, pp. 106258

Katti Bharath, **Asit Kumar Khanra** and M.J. Davidson, Hot deformation behavior and dynamic recrystallization constitutive modeling of Al-Cu-Mg powder compacts processed by extrusion at elevated temperatures, *J Materials: Design and Applications*, 0(0) 1-16, 2020

Katti Bharath, Arka Mandal, Anish Karmakar, **Asit Kumar Khanra**, M.J. Davidson, Understanding the effect of hot extrusion on the evolution of microstructure and associated mechanical properties in sintered Al-Cu-Mg alloys, *Materials Characterization* 170(3), 2020

Balaji Padya, P.K. Enaganti, Ravi Kali, N. Ravikiran, **N. Narasaiah**, P.K. Jain, A controlled process of atomic-scale material design via temperature-mediated grain refinement of NiCo<sub>2</sub>O<sub>4</sub> rods for capacitive energy storage, *Journal of Science: Advanced Materials and Devices*, 5 (2020) 173-174

Balaji Padya, N. Ravikiran, Ravi Kali, **N. Narasaiah**, P. K. Jain, High thermal energy storage and thermal conductivity of few-layer graphene platelets loaded phase change materials: A thermally conductive additive for thermal energy harvesting, *Energy Storage* 2 (2020) 199

Balaji Padya, Ravi Kali, N. Ravikiran, **N. Narasaiah**, P.K. Jain, Constructing graphene-

coupled nitrogen-doped carbon-based all-carbon hybrid for hybrid Li-ion supercapattery: An investigation and insight into "charge-averaged" charge/discharge voltage analysis, *Journal of Alloys and Compounds* 872 (2021) 159660

Shiven Ponnappureddy, Aritra Sarkar, A. Nagesha, **N. Narasaiah**, Bonta Srinivasa Rao, A re-visit to the Haigh diagram with the effect of creep damage on the high cycle fatigue behavior of alloy 617M, *International Journal of Fatigue*, 149, (2021) 106258

Y. Madhavi, **N. Narasaiah**, A. Jyothirmayi, L. Rama Krishna, Influence of surface roughness on the corrosion-fatigue behavior of MAO coated 6061-T6 Al alloy assessed in NaCl medium, *Surface and Coatings Technology*, 414 (2021) 127102

Balaji Padya, Ravi Kali, P.K. Enaganti, **N. Narasaiah**, P.K. Jain, Facile synthesis and frequency-response behavior of supercapacitor electrode based on surface-etched nanoscaled-graphene platelets, *Colloids and Surfaces A*, 609 (2021), 125587

Y. Madhavi, L. Rama Krishna, **N. Narasaiah**, Corrosion fatigue behavior of micro arc oxidation coated 6061-T6 Al alloy, *International Journal of Fatigue* 142 (2021) 105965

Y. Madhavi, L. Rama Krishna, **N. Narasaiah**, Corrosion-fatigue performance of hard anodized, MAO coated 2024-T3 and 7075-T6 aerospace Al alloys, *Transactions of Indian Institute of Metals*, (2021 In Press), DOI: <https://doi.org/10.1007/s12666-021-02313-7>

Murugesh Kumar R and **Brahma Raju Golla**, Effect of space holder on porosity, structure and mechanical properties of porous Al processed via powder metallurgy, *Transactions of the Indian Institute of Metals* (in press, 2021)

Sravan Kumar Thimmappa, **Brahma Raju Golla**, Suresh Babu Pitchuka and Bhanu Prasad V. V., Nanoindentation and high temperature oxidation behavior of ZrB<sub>2</sub>-

20SiC-(0-10 wt.%) Ta UHTCs, *Ceramics International* (in press, 2021)

Geethasree Kommineni, **Brahma Raju Golla**, Zafir Alam, Rajdeep Sarkar, V.V. Satya Prasad, Structure-property correlation and deformation mechanisms in ductile phase (Nbss) toughened cast Nb-Si alloys, *Journal of Alloys and Compounds* (in press, 2021)

Kommineni Geethasree, Zafir Alam, P. Sudharshan Phani, Rajdeep Sarkar, V. V. Satya Prasad, **Brahma Raju Golla**, Influence of Ti and Zr alloying elements on microstructure and micromechanical properties of near eutectic Nb-18.7Si alloy, *Materials Characterization* 171 110723 (2020)

Raju Vemoori and **Asit KumarKhanra**, Microstructural and mechanical properties of Al<sub>2</sub>O<sub>3</sub> and ZTA foams prepared by thermo-foaming technique, *Ceramic International* – 2021-  
<https://doi.org/10.1016/j.ceramint.2021.07.161>

Bheekya Naik, K Venkateswara Reddy, G Madhusudhan Reddy, **R. Arockia Kumar**, Development of high strength high electrical conductivity Cu-Gr composites through friction stir processing, *Materials Letters*, 265 (2020) 127437

K Venkateswara Reddy, R. Bheekya Naik, G. Rama Rao, G Madhusudhan Reddy, **R. Arockia Kumar**, Microstructure and damping capacity of AA6061/graphite composites produced through friction stir processing, *Composite Communications*, 20 (2020) 100352

Bheekya Naik, K Venkateswara Reddy, G Madhusudhan Reddy, **R. Arockia Kumar**, Development of high strength and high electrical conductivity Cu-Cr-Zr alloy through friction stir processing, *Fusion Engineering and Design* 161 (2020) 111962

B. Bhav Singh, G. Sukumar, Ashish Paman, G. Balaji, K. Siva Kumar, V. Madhu, **R. Arockia Kumar**, Comparative Study on the Ballistic Performance and Failure Mechanisms of High Nitrogen Steel and RHA Steel Against Tungsten Heavy Alloy Penetrators, *Journal of*

*Dynamic Behavior of Materials* 7 (2021) 60–80

Ramavath Bheekya Naik, K Venkatweswara Reddy, G Madhusudhan Reddy, **R Arockia Kumar**, Microstructure, mechanical and wear properties of friction stir processed Cu-1.0%Cr alloys *Fusion Engineering and Design* 164 (2021) 112202

Veera Babu, Jean Maria Fernandes, M. Kovendhan, Nandarapu Purushothamreddy, Reddivari Muniramaiah, **R.Arockiakumar**, N.S.Karthiselva, D. Paul Joseph, Investigation of structural, optical, electrical and mechanical properties of transparent conducting 'Ag' electrodes, *Physica B: Condensed Matter* 607 (2021) 412690

K Venkateswara Reddy, R. Bheekya Naik, G Madhusudhan Reddy, P. Chakravathry, S. Janakiram, **R. Arockia Kumar**, Damping capacity of aluminium surface layers developed through friction stir processing, *Materials Letters* 298 (2021) 130031

Prabhu, **R. Arockia Kumar**, T. K. Nandy Tungsten heavy alloys with two-phase matrix, ***Defence Science Journal*** 71 (2021) 564-571

Prabhu, **R. Arockia Kumar**, T. K. Nandy Fine tungsten precipitates in the matrix phase and their influence on the mechanical properties of a tungsten heavy alloy, *Philosophical Magazine* (2021)  
<https://doi.org/10.1080/14786435.2021.1948131>

Naga Sruthi Neelam, S. Banumathy, A. Bhattacharjee, **G.V.S. Nageswara Rao**, Md Zafir Alam Comparison of the isothermal and cyclic oxidation behaviour of Cr and Mo containing g-TiAlNb alloys, *Corrosion Science* 163 (2020) 1-22

Naga Sruthi Neelam, S. Banumathy, **G.V.S. Nageswara Rao**, A.K. Singh, A. Bhattacharjee Phase transformations in g-aluminide Ti-46.5Al-xNb-yCr-zMo-0.3B (x=3.5, 5; y, z=0,1,2) alloys, *Metallography Microstructure and Analysis* 9 (2020) 345-359

Naga Sruthi Neelam, S. Banumathy, **G.V.S. Nageswara Rao**, A. Bhattacharjee, Study of microstructure and mechanical properties of

g-Ti-46.5Al-2Cr-(3.5 & 5.0) Nb alloys, Materials Today: Proceedings (2021) (41) 1069-1072

### Funded Research Projects

#### New Projects Sanctioned:

**Dr. Mahesh Kumar Talari**, Development of novel B and C modified fillers for the gas tungsten arc welding of Ti alloys, Aeronautics R&D Board, DRDO, Rs. 48 Lakhs

**Dr. Nagamuthu Kishore Babu**, Understanding the Role of Hydrogen in Titanium Alloy Weldments, Aeronautics R&D Board, DRDO, 48.24 Lakhs

#### Ongoing Projects:

**Dr. Sreedevi Varam**, Hydrogen Production through Water Splitting by Novel Nanocrystalline Al-based Alloys (with Added Few Layered Graphene), SERB-Core Research Grant, File No. SERB/F/10375/2019-20 dated 18/02/2020, Rs. 34.2 Lakhs.

**Dr. Uma Maheshwara Rao Seelam**, Towards 3 tesla coercivity Nd-Fe-B magnets without dysprosium addition into the bulk, SERB-Core Research Grant, File No. CRG/2020/006001 Dt. 29/12/2020, Rs. 29.8 Lakhs.

#### Completed Projects:

**N. Narasaiah**, Evaluation of Creep-Fatigue Crack Growth (CFCG) for Alloy 625 Cast material, AUSC: I-KPK-T-MDG-035, dated: 16-05-2018 , IGCAR, Kapakkam, DAE,

Govt. of India (01.05.2018–30.09.2019), 490.56 Lakhs.

**N.Narasaiah**, Oxide dispersion strengthened (ODS) iron based alloys for Advanced Ultra Super Critical (AUSC) Technology. TMD/CER/CleanCoal/2017/036 (ARCI) (C) and (G) dated 24-08-2018 (01.10.2018 – 30.09.2021), 90.812 Lakhs.

**R. Arockia Kumar**, Development of high vibration damping composite layers through friction stir processing, ECR/2017/001227 dated 23 June 2017 DST-SERB-ECR, (15.07.2017-14.12.2020) 44.04 Lakhs.

**GVS Nageswara Rao**, Generation of Creep Data of wrought Alloys of 617M and 304HCu, AUSC:I-KPK-T-MDG-008, Date: 13/02/2018IGCAR, Kapakkam, DAE, Govt. of India, (28.06.2018 to 31.01.2021) 620.9 Lakhs.

**GVS Nageswara Rao**, Evaluation of Creep-Fatigue interaction properties of Alloy 617M forging, AUSC:I-KPK-T-MDG-007, Date: 14/05/2018 IGCAR, Kapakkam, DAE, Govt. of India, (24.08.2018 to 30.09.2020) 348.89 Lakhs.

**GVS Nageswara Rao**, Evaluation of Creep-Fatigue interaction properties of Alloy 625 Casting, AUSC:I-KPK-T-MDG-033, Date: 14/05/2018 IGCAR, Kapakkam, DAE, Govt. of India, (06.12.2018 to 31.01.2021), 348.89 Lakhs.

**Ajoy K. Pandey**, B. Srinivasa Rao, Asit K. Khanra, G. Brahma Raju, N. Narasaiah, Evaluation of Creep – Fatigue Crack Growth (CFCG) for Alloy 617 forging material, Mission Directorate, AUSC, AUSC: I-KPK-T-MDG-034, dated: 16-05-2018, Rs. 481.0 Lakhs.

S. No.	Title	Total Amount sanctioned	Funding agency and Project No.	Installment 1, 2018-2019	Installment 2, 2019-2020	Installment 3, 2020-2021
1	Development of novel B and C modified fillers for the gas tungsten arc welding of Ti alloys	48 Lakhs	AR&DB	----- ---	----- --	Rs.29,81,172.00 Installment 1
2	Understanding the Role of Hydrogen in Titanium Alloy Weldments	48.24L akhs	AR&DB	----- ---	----- --	Rs.29,24,770.00 Installment 1

3	Hydrogen Production through Water Splitting by Novel Nanocrystalline Al-based Alloys	34.2 Lakhs	SERB-Core Research Grant, File No. SERB/F/103 75/2019-20	----- --	Rs.19,46,754.00 Installment 1	Yet to receive 2 <sup>nd</sup> installment
4	Towards 3 tesla coercivity Nd-Fe-B magnets without dysprosium addition into the bulk	29.8 Lakhs	SERB-Core Research Grant, File No. CRG/2020/0 06001	----- ---	----- --	Rs.9,50,000.00 Installment 1  <b>(2021-2022)</b> Rs.6,99,000.00 Installment 2
5	Evaluation of Creep-Fatigue Crack Growth (CFCG) for Alloy 625 Cast material AUSC	490.56 Lakhs	IGCARKapakkam, DAE, Govt. of India AUSC: I-KPK-T-MDG-035, dated: 16-05-2018	Rs.4,68,85,000.00	----- --	----- -
6	Oxide dispersion strengthened (ODS) iron based alloys for Advanced Ultra Super Critical (AUSC) Technology	90.812 Lakhs	DST TMD/CER/CleanCoal/2017/036 (ARCI) (C) and (G)	Rs.70.730 Lakhs	Rs.3.12 Lakhs	Rs.2.2 Lakhs
7	Development of high vibration damping composite layers through friction stir processing	44.04 Lakhs	DST-SERB-ECR ECR/2017/0 01227 dated 23 June 2017	Rs.5,15,470.00	----- --	----- -
8	Generation of Creep Data of wrought Alloys of 617M and 304HCu	620.9 Lakhs	IGCARKapakkam, DAE, Govt. of India AUSC:I-KPK-T-MDG-008	Rs.5,75,21,602.00	Rs.36,33,503.00	Rs.9,43,702.00
9	Evaluation of Creep-Fatigue interaction properties of Alloy 617M forging	348.89 Lakhs	IGCARKapakkam, DAE, Govt. of India AUSC:I-KPK-T-MDG-007,	Rs.3,39,12,000.00	Rs.9,77,000.00	----- -
10	Evaluation of Creep-Fatigue interaction properties of Alloy 625 Casting	348.89 Lakhs	IGCARKapakkam, DAE, Govt. of India AUSC:I-	Rs.3,39,12,000.00	Rs.9,77,000.00	----- -

			KPK-T-MDG-033			
11	Evaluation of Creep – Fatigue Crack Growth (CFCG) for Alloy 617 forging material	481.0 Lakhs	IGCARKapakam, DAE, Govt. of India AUSC: I-KPK-T-MDG-034	Rs.4,47,11,000.00	----- --	----- -

### Guest Talks/webinars delivered

**C. Vanitha**, Effect Of Annealing Temperature On Microstructure And Mechanical Properties Of Selective Laser Melted Ti-6Al-4V Alloy, Dr.N.G.P. Institute of Technology, Coimbatore , TN, 15 December 2020.

**Asit Kumar Khanra**, Teaching Materials Science & Engineering with Innovative Analogy, NIT Rourkella, 2 November 2020.

**R Arockia Kumar**, Surface Composites by Friction Stir Processing for Functional Applications, Department of Mechanical Engineering, Karunya Institute of Science and Technology and Sciences, 30 May 2020.

**G Brahma Raju**, High Temperature Materials, Rajkiya Engineering College Banda, India, 21 September 2020.

**Uma M. Rao Seelam**, Scanning Electron Microscopy, NIT Andhra Pradesh, 19 October 2020.

**Uma M. Rao Seelam**, Careers in Metallurgical Engineering, RGUKT (IIIT), RK Valley, Idupulapaya, Andhra Pradesh, 7 November 2020.

**Uma M. Rao Seelam**, Universal Human Values: Understanding Human Being, RGUKT (IIIT), Nuzvid & Srikakulam, Andhra Pradesh, 16 December 2020.

### New lab established/ Equipment and Software procured

#### Welding Laboratory: Dr. Mahesh and Dr. Kishore

Linear Welder: 3,67,500

Manual Welding (2): 1,18,455

MIG Welding: 2,97,582

TIG Welding: 6,40,185

### Total: 14,23,722 Awards/ Recognitions/ Achievements

**G. Brahma Raju**: Reviewer Excellence and Appreciation Certificate, Transactions of IIM (Journal), 2020.

**G. Brahma Raju** and team received IIM Best Non-Ferrous Paper Medal.

**G. Brahma Raju** and team's research paper was selected as Editor's Choice article for 2020 from Metallography, Microstructure, and Analysis (ASM International Journal)

**G. V. S. Nageswara Rao** and team's research paper was selected as Editor's Choice article for 2020 from Metallography, Microstructure, and Analysis (ASM International Journal)

### PhD Research guidance

**K.N.B. Kumar** (Roll No. 701251) completed his Ph. D with title "Structure-property correlation on similar and dissimilar friction stir welded magnesium-based alloys" under the guidance of **C.Vanitha**, April, 2021

**Shak Mubina** (Roll No. 716157) completed her Ph. D with title "Processing and Properties Evaluation of CNFs dispersed SiC based Composites" under the guidance of **Asit Kumar Khanra** & B. P Saha, July, 2021.

**Shaik Mahammad Ali** (Roll No. 715054) completed his Ph. D with title "Processing and properties of Cu-Al and Cu-ZrB<sub>2</sub> materials developed via powder metallurgy" under the guidance of **Brahma Raju Golla**, December, 2020



**Shivkumar Khaple** (Roll No. 714143) completed his Ph. D with title "Effect of alloying additions on the microstructure and mechanical properties of Fe-Al based lightweight steel" under the guidance of **Brahma Raju Golla** and Dr. V.V. Satya Prasad, July, 2021

**Bheekya Naik R** (Roll No. 714028) completed his Ph. D with title "Development of HSHC copper alloys through friction stir processing" under the guidance of **R Arockia Kumar**, July, 2020

**Naga Sruthi Neelam** (Roll No. 701627) completed her Ph. D with title "Influence of Alloying Additions on Solidification, Phase Transformation, Mechanical and Oxidation behaviour of Ti-46.5Al-xNb-yCr-zMo-0.3B g-TiAl Alloys" under the guidance of **GVS Nageswara Rao** & Amit Bhattacharjee, March, 2020

**Prakash** (Roll No. 715053) completed his Ph. D with title "Influence of thermomechanical treatment on microstructure, mechanical and creep rupture behaviour of reduced activation ferritic-martensitic steel" under the guidance of **GVS Nageswara Rao**, June, 2020

### Distinguished guests visited the department

S. No	Webinar Title	Invited Guest and Organisation	Date
1	Is placement the only thing that matters in engineering?	Shri Rinkesh Gorasia, Founder, Upskill India	21 November 2021
2.	Next generation solar cells: Materials and Methods	Dr. Easwaramoorthi Ramasamy, Scientist E, ARCI Hyderabad	17 August 2021
3.	Role of Material science and engineering in nanoelectronics	Dr. Gautam Gaddemane, Post-doc researcher, IMEC, Belgium.	26 march 2021
4	Advanced Structural and thermostructural ceramics its composites for future energy applications	Dr. T.S.R. Ch. Murthy, BARC, Mumbai.	9 March 2021
5	Imaging, synchrotron imaging techniques and ptychography	Dr. Venkata Sree Charan Kuppili, Associate Scientist, SM beamline, Saskatchewan, canada.	1 April 2021
6	Aluminium- from Mine to metal	Shri R N Chouhan, and Shri V K Jha, JNARDDC Nagpur	16 April 2021
7	Career prospects in Neuromorphic computing and Artificial Intelligence hardware	Dr. Bhagwati Prasad, Principal Research Scientist, Western	1 March 2021

	technologies	Digital, USA	
8	Plasmonic nanoparticles for biodiagnostics in resource limited settings	Dr Sirimuvva Tadepalli, Post-doc, Stanford University, USA	2 December 2020
9	High entropy alloys for high temperature applications	Dr. Rajesh Korla, IIT Hyderabad	17 March 2021

### Best student papers and other achievements

- Saurabh Kumar Pandey and Srest Somay "Numerical Analysis of rGO/silver nanowire based single crystal perovskite solar cell"IEEE TRANSACTIONS ON ELECTRON DEVICES, 2020. DOI: 10.1109/TED.2020.3014272.
- Saurabh Kumar Pandey and Srest Somay "Device Engineering Approach Toward Stable, Efficient, andEco-Friendly Perovskite Solar Cell"IEEE TRANSACTIONS ON ELECTRON DEVICES, 2020.DOI:10.1109/TED.2020.3047879.
- Sai Deepak Kumar Ayyalasomayajula, Mohammad Fayaz Anwar, Esari Vara Prasad, Pedada Bharath Sreevatsava and C Vanitha, Effect of temperature and load during hot impression creep of Cu-Zn-Al alloy, Materials Today: Proceedings, Article in press, Volume 39, Part 4, 2021, Pages 1296-1302.
- Premkumar Manda, Antim Rewapati,C. Vanitha &A.K. Singh, structure - property - processing correlations in metastable beta titanium alloys Ti-10V-2Fe-3Al and Ti5Al-5Mo-5V-3Cr, Advances in Materials and Processing Technologies, July 2021
- B Rishik Bharadwaj (185105) received OPJEMS fellowship in November 2020
- Srest Somay (185146) received an Indian Academy of Science Fellowship to conduct research at IIT Hyderabad.
- Tanuja Gollangi (185150) received Institute Merit Scholarship in AY2020-21 awarded by NITW.
- B RISHIK BHARADWAJ(185105), Rahul Kuamr Agrawal (185140) and Srest Somay (185146) were selected under special exchange program to do their final year UG at IIT Delhi as per the MoU between IITD and NITW.
- Rahul Agrawal(185140) received Institute Merit Scholarship in AY 2021-21.

### Details of students joined in higher educational institutes

**Chintada Chandrasekhar**, M. Tech., Joined Ph.D. program (branch) at Indian Institute of Technology Roorkee

### **B.Tech. (Metallurgical and Materials Engineering) Batch: 2017-2021**

S.No.	Roll No	Name of the Student	Currently as
1	175114	D Rahul Kumar	PhD (IIT-Delhi)
2	175126	Sravya Mareedu	M.S. University of Texas, USA

3	175111	Bristi Panja	M.S. Tufts University USA
4	175122	Kodam Abhigna	PhD (IIT-Delhi)
5	175138	Rafshan UI Atik	MTech (IIT-Madras)

**M.Tech. (Industrial Metallurgy)**

**Batch: 2019-2021**

<b>S.No.</b>	<b>Roll No</b>	<b>Name of the Student</b>	<b>Currently as</b>
1	195551	Abhishek Panda	Development Officer in LIC
2	195558	Shiv Singh	PGET in MKU
3	195559	Shivasaikumar Sirpathi	Searching for job
4	195562	Balakrishna Thotakura	PGET in Crusoe Technologies
5	195564	Sheshivardhan varimadla	AI engineer in Burntec
6	195565	Vishal Shambu	JRF in ARCI
7	195611	Prasad Matre	Senior Solution Design Engineering at Armstrong Automation

**M.Tech. (Materials Technology)**

**Batch: 2019-2021**

<b>S.No.</b>	<b>Roll No.</b>	<b>Name of the Student</b>	<b>Currently as</b>
1	195501	Ajay V	PhD (IIT-Bombay)
2	195505	Gaddam Kranthikumar	PhD (IIT-Roorkee)

3	195510	Matam Hemanth	Vegro Foods (Food export company)
4	195511	Matre Prasad Nivrutti	Armstrong
5	195513	Rajneesh Singh	Valera
6	195514	Ritesh Kumar Singh	Software developer in Surya Developer
7	195515	Sai Rakesh Kandagatla	R&D engineer in Objectify
8	195516	Vaibhav Vilas Burde	Software Engineer in Amazon

#### **Department Outreach Activities**

- Review of research papers
- Review of PhD thesis
- Delivered invited lectures
- Attended Board of Study meetings

#### **Department Association/Students Clubs Activities**

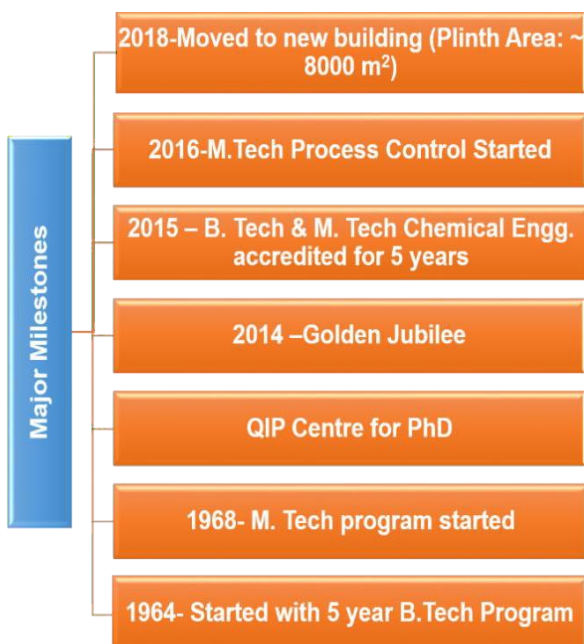
- Guest Lecture arranged: USA -02, Belgium-01, Korea-01, India-06
- Placement Marathon
- Fresher's welcome for Juniors
- Farewell for outgoing students
- Talk with T&P Coordinator
- Talk with people placed in core, non core & software

## Summary

S.No.	Activity	Number
<b>1</b>	<b>Publications (Peer Reviewed Journals/ conferences)(SCOPUS/SCI)</b>	
	International Journals	30
	National Journals	-
	International Conferences	-
	National Conferences	-
<b>2</b>	<b>Funded Research Projects/SPARC projects (2020-21)</b>	
	Completed Projects	7
	AUSC, DST, SERB	Rs. 2425.09 Lk
	Ongoing Projects (Rs 1.61 Crores)	4
	IMPRINT PROJECTS	-
	FIST PROJECT	-
	BRICS project	-
	AUSC, DST, SERB, ARDB-DRDO	11
<b>3</b>	<b>SPARC Project Workshops</b>	-
<b>4</b>	<b>Consultancy Works (2019-20)</b>	-
<b>5</b>	<b>Patents</b>	-
	Awarded	-
	Filed	-
<b>6</b>	<b>Books and Book Chapters</b>	-

	Books	-
	Book Chapters	-
<b>7</b>	<b>Conferences/ Workshops/GIAN courses/FDPs Conducted</b>	<b>1</b>
<b>8</b>	<b>Guest talks/ Webinars delivered</b>	<b>7</b>
<b>9</b>	<b>New Labs Established (Equipment/Software Procured)</b>	<b>Rs. 14.23 Lk</b>
<b>10</b>	<b>Awards/Recognitions/Achievements</b>	<b>4</b>
<b>11</b>	<b>Research Guidance (Completed in 2019-20)</b>	<b>7</b>
<b>12</b>	<b>International Visits of the Faculty Members/ students</b>	<b>-</b>
<b>13</b>	<b>Students Achievements</b>	
	Placements	
	B.Tech	71%
	MTech	11%
	Higher Education (M.Tech, PhD at IITs & Abroad)	12%
	Lab Development Activities	1
	Conference visits	-
<b>14</b>	<b>Metallurgical and Materials Engineering Association Activities</b>	<b>9</b>
<b>15</b>	<b>Distinguished Guests visiting the Department/Delivering Expert Lecture/Keynote Address</b>	<b>-</b>
<b>16</b>	<b>Outreach Programmes</b>	<b>4</b>

# DEPARTMENT OF CHEMICAL ENGINEERING








Programme	Number of Students
PhD	29
M.Tech (Chemical Engineering)	22 (I-Year) + 20(II-Year)
M.Tech (Systems & Control Engineering )	17 (I-Year) + 16(II-Year)
B.Tech (Chemical Engineering)	119 (II - Year) + 135 (III - Year) + 102 (IV - Year)







## Thrust Research Areas







Fuel cells	Waste water treatment	Nano catalysis	Process control
Li-ion Batteries	CO <sub>2</sub> Capture and Storage	Nanofluids	Process Modelling & Simulation
Super capacitors	E-waste management	Micro reactors	Computational Fluid Dynamics
Flow batteries	Natural gas purification	Cavitation	Molecular Modelling & Simulation
Membrane Separation	Bio Chemical Engineering	Process Intensification	
	Pharmaceuticals	Thermoset composites	








## Faculty Details

S. No.	Name of the Faculty Member and Designation	Highest Qualification	Research Interests	Photograph
1.	<b>Prof. Shirish H. Sonawane</b> <b>Professor</b>	Ph.D.	Fluidized beds, Biochemical Engg., Microbial fuel cells	
2.	<b>Prof. A. Venu Vinod</b> <b>Professor</b>	Ph.D.	Fluidized beds, Bioreactors, Heat transfer, Nanofluids	
3.	<b>Prof. Sarath Babu Anne</b> <b>Professor</b>	Ph.D.	Modelling and Simulation, Reaction Engg. , CO <sub>2</sub> Capture and Utilization	
4.	<b>Prof. Anand Kishore. K</b> <b>Professor</b>	Ph.D.	Biochemical Engg. Modelling and Simulation	
5.	<b>Dr. K. Srivani</b> <b>Associate Professor</b>	Ph.D.	Biochemical Engineering	

6.	<b>Dr. S. Srinath</b> <b>Associate Professor &amp; Head</b>	Ph.D.	Thermochemical conversion, Process Intensification , Catalysis, Bio fuels , Process Modelling and simulation	
7.	<b>Dr. A. Seshagiri Rao</b> <b>Associate Professor</b>	Ph.D.	Process Control, Wastewater treatment	
8.	<b>Dr. P.V. Suresh</b> <b>Associate Professor</b>	Ph.D.	Fuel Cells, CO <sub>2</sub> Capture and Utilization, CFD, Chemical looping Combustion.	
9.	<b>Dr. S. Vidyasagar</b> <b>Associate Professor</b>	Ph.D.	Sustainable Energy Technologies, Modelling and Simulation	
10.	<b>Dr. S. Murali Mohan</b> <b>Assistant Professor</b>	Ph.D.	Flow Batteries, Fuel cells and Membrane Separations	
11.	<b>Dr. G. Uday Bhaskar Babu</b> <b>Assistant Professor</b>	Ph.D.	Modelling and Simulation, Energy Integration, Process Control	

12	<b>Dr. V. Ram Sagar</b>  <b>Assistant Professor</b>	Ph.D.	Process Scheduling, Chemical Looping Combustion	
13.	<b>Dr. Raghu Raja Pandiyan</b>  <b>Assistant Professor</b>	Ph.D.	Thermoset Composites, Process Modelling and Simulation	
14.	<b>Dr. K.S. Rajmohan</b>  <b>Assistant Professor</b>	Ph.D.	Nanocatalysis, Fuel cells and Batteries, Bio refineries	
15.	<b>Dr. Manohar Kakunuri</b>  <b>Assistant Professor</b>	Ph.D.	Synthesis of carbon Nanomaterials, Li-ion batteries	
16.	<b>Dr. Praveen K. Bommineni</b>  <b>Assistant Professor</b>	Ph.D.	Molecular Dynamics and Simulations	
17.	<b>Dr. Ramya Araga</b>  <b>Assistant Professor</b>	Ph.D.	Synthesis of Nanomaterials, Wastewater Treatment	

18.	<b>Dr. Anjana PA</b> <b>Assistant Professor</b>	Ph.D.	Catalysis, Energy and Environmental Applications	
19.	<b>Dr. P. Sampath Kumar</b> <b>Assistant Professor</b>	Ph.D.	Energy Storage and Conversion Devices, Scale up of Nanomaterials	
20.	<b>Dr. Naresh Thota</b> <b>Assistant Professor</b>	Ph.D.	Molecular Dynamics and Simulation for Energy, Environmental and Healthcare Applications	
21.	<b>Dr. Kishant Kumar</b> <b>Assistant Professor</b>	Ph.D.	Molecular Dynamics, Monte Carlo Simulation	
22.	<b>Prof. Y. Pydi Setty</b> <b>Visiting Professor</b>	Ph.D.	Fluidized beds, Biochemical Engg., Microbial fuel cells	

## Journal Publications

Heidari, Mohammad Reza, Mohammad Malakootian, Grzegorz Boczkaj, Xun Sun, Yang Tao, **Shirish H. Sonawane**, and Hakimeh Mehdizadeh. "Evaluation and start-up of an electro-Fenton-sequencing batch reactor for dairy wastewater treatment." *Water Resources and Industry* 25 (2021): 100149.

Landge, V. K., **S. H. Sonawane**, M. Sivakumar, S. S. Sonawane, **G. Uday Bhaskar Babu**, and Grzegorz Boczkaj. "S-scheme heterojunction Bi<sub>2</sub>O<sub>3</sub>-ZnO/Bentonite clay composite with enhanced photocatalytic performance." *Sustainable Energy Technologies and Assessments* 45 (2021): 101194.

Landge, Vividha K., **Shirish H. Sonawane**, Sivakumar Manickam, **G. Uday Bhaskar Babu**, and Grzegorz Boczkaj. "Ultrasound-assisted wet-impregnation of Ag-Co nanoparticles on cellulose nanofibers: Enhanced catalytic hydrogenation of 4-nitrophenol." *Journal of Environmental Chemical Engineering* (2021): 105719.

Adsul, Swapnil H., Uday D. Bagale, **Shirish H. Sonawane**, and R. Subasri. "Release rate kinetics of corrosion inhibitor loaded halloysite nanotube-based anticorrosion coatings on magnesium alloy AZ91D." *Journal of Magnesium and Alloys* 9, no. 1 (2021): 202-215.

Pandi, Narsimha, **Shirish H. Sonawane**, **Anand Kishore Kola**, Ujwal Kishor Zore, Pramod H. Borse, Swapnil B. Ambade, and Muthupandian Ashokkumar. "Halloysite nanotubes-based supercapacitor: Preparation using sonochemical approach and its electrochemical performance." *Energy, Ecology and Environment* 6, no. 1 (2021): 13-25.

Hakke, Vikas, **Shirish Sonawane**, Sambandam Anandan, Shriram Sonawane, and Muthupandian Ashokkumar. "Process intensification approach using microreactors for synthesizing nanomaterials—A critical review." *Nanomaterials* 11, no. 1 (2021): 98.

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system." *Materials Today: Proceedings* 46 (2021): 5544-5549.

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Pandi, Narsimha, **Shirish H. Sonawane**, and **K. Anand Kishore**. "Synthesis of cellulose nanocrystals (CNCs) from cotton using ultrasound-assisted acid hydrolysis." *Ultrasonics sonochemistry* 70 (2021): 105353.

Landge, Vividha K., **Shirish H. Sonawane**, Raghunath V. Chaudhari, and **G. Uday B. Babu**. "Selective Oxidation of Glycerol: A Biomass-Derived Feedstock Using the Pt-Cu Janus Catalyst for Value-Added Products." *Industrial & Engineering Chemistry Research* 60, no. 1 (2020): 185-195.

Potdar, Shital B., B. V. S. Praveen, and **Shirish H. Sonawane**. "Sonochemical approach for synthesis of zinc oxide-poly methyl methacrylate hybrid nanoparticles and its application in corrosion inhibition." *Ultrasonics Sonochemistry* 68 (2020): 105200.

Patil, Govind K., Pritam B. Patil, Sagar R. Pardeshi, Rahul L. Rajput, **Shirish H. Sonawane**, Arun Mujumdar, and Jitendra B. Naik. "Effect of process parameters on the recovery of lactose in an antisolvent acetone/acetone-ethanol mixture: A comparative study based on sonication medium." *Ultrasonics sonochemistry* 67 (2020): 105128.

Yashawantha, Kyathanahalli Marigowda, and **A. Venu Vinod**. "ANFIS modelling of effective thermal conductivity of ethylene glycol and water nanofluids for low temperature heat

transfer application." *Thermal Science and Engineering Progress* 24 (2021): 100936.

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Srinivas, T., and **A. Venu Vinod**. "Natural convection heat transfer using water-based nanofluid in a shell and helical coil heat exchanger." *Chemical Papers* 75, no. 6 (2021): 2407-2416.

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Upender, H., **K. Anand Kishore**, T. Srinivas, S. Mishara, and P. Suresh Kumar. "EFFECT OF RESTITUTION COEFFICIENT IN CFD SIMULATION OF SOLID-LIQUID TAPERED INVERSE FLUIDIZED-BED HYDRODYNAMICS." *Palarch's Journal of Archaeology of Egypt/Egyptology* 17, no. 9 (2020): 4118-4136.

Donkadokula, Naresh Yadav, Iffat Naz, **Anand Kishore Kola**, and Devendra Saroj. "Assessment of the aerobic glass beads fixed biofilm reactor (GBs-FBR) for the treatment of simulated methylene blue wastewater." *Scientific Reports* 10, no. 1 (2020): 1-14.

Tejaswini, E. S. S., **G. Uday Bhaskar Babu**, and **A. Seshagiri Rao**. "Design and evaluation of advanced automatic control strategies in a total nitrogen removal activated sludge plant." *Water and Environment Journal* 35, no. 2 (2021): 791-806.

Maruthi Prasad, G., and **A. Seshagiri Rao**. "Multi-model cascade control strategy design based on gap metric for nonlinear processes." *Indian Chemical Engineer* (2020): 1-14.

Panjwani, Soniya, E. S. S. Tejaswini, and **A. Seshagiri Rao**. "Fractional Order Model-Based Design of Controllers for Improved Operation of Wastewater Treatment Plants." *Transactions of the Indian National Academy of Engineering* 5, no. 4 (2020): 719-726.

Bhaskaran, Anil, and **A. Seshagiri Rao**. "Enhanced predictive control strategy for

unstable parallel cascade processes with time delay." *Chemical Engineering Communications* (2020): 1-16.

Tejaswini, E. S. S., Soniya Panjwani, and **A. Seshagiri Rao**. "Design of hierarchical control strategies for biological wastewater treatment plants to reduce operational costs." *Chemical Engineering Research and Design* 161 (2020): 197-205.

Prasad, G. Maruthi, Vatsal Kedia, and **A. Seshagiri Rao**. "Multi-Model Predictive Control (MMPC) for Non-linear Systems with Time Delay: An Experimental Investigation." In *2020 First IEEE International Conference on Measurement, Instrumentation, Control and Automation (ICMICA)*, pp. 1-5. IEEE, 2020.

Siva, Mullapudi, Snehal Meshram, Dipesh S. Patle, and **Uday Bhaskar Babu Gara**. "Model based control strategies to control voltage of Proton Exchange Membrane Fuel Cell." *Chemical Product and Process Modeling* (2020).

Shrikhande, Savyasachi, **G. Uday Bhaskar Babu**, Z. Ahmad, and Dipesh S. Patle. "Intensification and analysis of ethyl levulinate production process having a reactive distillation through vapor recompression and bottom flash techniques." *Chemical Engineering and Processing-Process Intensification* 156 (2020): 108081.

Sharma, Shubhanshu, and **G. Uday Bhaskar Babu**. "A new control strategy for a higher order proton exchange membrane fuel cell system." *International Journal of Hydrogen Energy* 45, no. 48 (2020): 25945-25959.

Ranganayakulu, Rayalla, **Ambati Seshagiri Rao**, and **Gara Uday Bhaskar Babu**. "Analytical design of fractional IMC filter–PID control strategy for performance enhancement of cascade control systems." *International Journal of Systems Science* 51, no. 10 (2020): 1699-1713.

Chiluka, Suresh Kumar, **Seshagiri Rao Ambati**, **Muralimohan Seepana**, and **Uday Bhaskar Babu Gara**. "A New VRFT Approach for IMC-PID Feedback-Feedforward Controller Design based on Robustness." *IFAC-PapersOnLine* 53, no. 1 (2020): 147-152.

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Shiek, Abdul Gaffar, VS Raghu Kumar Machavolu, **Murali Mohan Seepana, and Seshagiri Rao Ambati.** "Design of control strategies for nutrient removal in a biological wastewater treatment process." *Environmental Science and Pollution Research* 28 (2021): 12092-12106.

Sheik, Abdul Gaffar, **Murali Mohan Seepana, and Seshagiri Rao Ambati.** "Supervisory control configurations design for nitrogen and phosphorus removal in wastewater treatment plants." *Water Environment Research* (2021).

Chiluka, Suresh Kumar, **Seshagiri Rao Ambati, Murali Mohan Seepana, and Uday Bhaskar Babu Gara.** "A novel robust Virtual Reference Feedback Tuning approach for minimum and non-minimum phase systems." *ISA transactions* (2021).

Abdulla, Sheikh, **Murali Mohan Seepana, and Venkata Suresh Patnaikuni.** "Performance Comparison of PEM Fuel Cell with Enhanced Cross-Flow Split Serpentine and Single Serpentine Flow Field Designs." *Arabian Journal for Science and Engineering* 45, no. 9 (2020): 7691-7703.

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silver nanoparticles." *IET nanobiotechnology* 14, no. 9 (2020): 864-869.

**Anantharaman, Anjana P.,** and Hari Prasad Dasari. "Potential of pyrochlore structure materials in solid oxide fuel cell applications." *Ceramics International* 47, no. 4 (2021): 4367-4388.

Roy, Projesh Kumar, **Kishant Kumar,** Foram M. Thakkar, Amar Deep Pathak, K. Ganapathy Ayappa, and Prabal K. Maiti. "Investigations on 6FDA/BPDA-DAM polymer melt properties and CO<sub>2</sub> adsorption using molecular dynamics simulations." *Journal of Membrane Science* 613 (2020): 118377.

Rath, Soumya Lipsa, and **Kishant Kumar.** "Investigation of the effect of temperature on the structure of SARS-Cov-2 Spike Protein by Molecular Dynamics Simulations." *Frontiers in molecular biosciences* 7 (2020).

## Funded Research Projects

### Ongoing Projects

**Dr Shirish Sonawane** and **Dr. Perugu Shyam** Demonstration of Technology for treatment of rain harvested water lakes in Warangal Telangana State, DST WTI, 2021-24, 44.41 Lakhs.

**Dr Shirish Sonawane** and **Dr. Murali Mohan Seepana,** Development and Demonstration of Pilot-scale Hybrid Wastewater Treatment System with Hydrodynamic Cavitation and Biosurfactant for Recycling of Textile Effluent, IMPRINT SERB, 2019-22, 41.42 Lakhs.

**Dr Shirish Sonawane,** Process Development for the production of Janus Nanoparticles for selected catalytic reactions, SERB DST, 2018-21, GOI. 20.87 Lakhs.

**Dr. G Uday Bhaskar Babu,** Identification and Control strategies for improvement of Proton Exchange Membrane (PEM) Fuel Cell, SERB, DST, EEQ/2018/000993 dated 26-02-2019, Rs. 17.1 Lakhs.

**Dr. A. Seshagiri Rao,** Low cost innovative technology for water quality monitoring and water resources management for urban and rural water systems in India, (LOTUS) Indo-European Horizon 2020 project.



**Dr. A. Seshagiri Rao**, Duo-India grant to visit The Autonomous University of Barcelona (UAB), Spain and work on Machine learning based control for wastewater treatment plants, Euro 3000, 2020.

**Dr. Manohar Kakunuri**, Activated Graphene/Carbon composite nanofibers as high performance anode material for sodium ion battery, SERB, No. SB/OS/PDF-040/2016-17, Dt. 15/02/2018, 25.6 lakhs.

**Dr. Murali Mohan Seepana**, Development and Demonstration of Hydrogen Redox Flow Battery using Non-Precious Electrocatalysts SPARC 2019-2021, Rs.43.17 Lakhs.

**Dr Srinath, Dr Shirish, Dr Kishant** and Dr P. Rathish Kumar (Civil Eng.), Effective Management of Process Slag from PCB smelting, C-MET Hyderabad. Dated 05-05-2021, Rs. 10 Lakhs

**Dr. Murali Mohan Seepana**, Tackling textile pollution using a 3D printed hybrid process, The Royal Society, UK, IES\R1\201244 dated 30-03-2021, Rs.12.36 Lakhs.

**Dr. Anand Kishore Kola**, Low-cost Biodegradable Polymer for Application in Food Packaging" SERB, GoI, 2021, 25.5 Lakhs.

**Dr. Kishant Kumar**, Green Solvents for Recycling Cathodes of Spent Li-Ion Batteries, SERB, GoI, 2021, 25.16 Lakhs.

**Dr Shirish Sonawane**, Development of process for the synthesis of cellulose nanocrystals from MCC, Tevoren Technologies LLP, 2021, Rs.3.30 Lakhs.

**Dr Shirish Sonawane** and **Dr S. Srinath**, Cavitation based dispersion of Boron nanoparticles into JP10 Fuel, GTRE DRDO, 2019-21, Rs. 9.95 Lakhs.

### Completed Projects

**Dr Shirish Sonawane**, Ultrasonic encapsulation of bioactive compounds to deliver in the food matrix, Indo-Russia DST-RFBR, 2018-20, Rs. 16 Lakhs.

**Dr. A. Venu Vinod**, Heat Transfer Enhancement in Plate-Fin Exchanger using Nanorefrigerants, Aeronautics Research & development Board(ARDB), 2017, Rs. 31 Lakhs.

**Dr. Raghu Raja Pandiyan Kuppusamy**, Development of One-Shot Integrated Thick Sectioned Composite Parts using Semi-Cured Composite Laminates, SERB/F/4360/2017-2018 dated- 04/08/2017 EMR Scheme, SERB, DST 27.84 lakhs.

Dr. Nagasrinivasulu, **Dr. P. V. Suresh**, Dr. S. Sreenivasarao, Design and Development of Passive Direct Methanol Fuel Cell integrated with Liquid Electrolyte for Portable Power Applications, SERB, EMR/2016/003015 dated 24-03-2017, Rs. 19.46 Lakhs.

Dr. Soumya LipsaRath, **Dr. Kishant Kumar**, <https://covid19-hpc-consortium.org/projects> Department of energy, Lawrence Berkeley National Laboratory, USA.

S. No.	Title	Total Amount sanctioned	Funding agency and Project No.	Instalment 1,2018-2019	Installment 2, 2019-2020	Installment 3, 2020-2021
1	Development and Demonstration of Pilot-scale Hybrid Wastewater Treatment System with Hydrodynamic Cavitation and Bio surfactant for Recycling of	Rs. 41.42 Lakhs	IMP/2019/0000 04, dated 16 December 2019		15,73,000/- (I Installment on 16th Dec, 2019)	

	Textile Effluent					
2	Process Development for the production of Janus Nanoparticles for selected catalytic reactions	Rs. 20.87 Lakhs	SERB DST, 2018-21 , EMR/2016/0075 85	9,62,546/- 15th March , 2018	5,50,000/- 4th June, 2019	5,00,000/- 14th Jan, 2021
3	Identification and Control strategies for improvement of Proton Exchange Membrane (PEM) Fuel Cell	Rs. 17.1 Lakhs	SERB,DSTEEQ/ 2018/000993 dated 26-02-2019			
4	Low cost innovative technology for water quality monitoring and water resources management for urban and rural water systems in India	-	Indo-European Horizon 2020 project			
5	Machine learning based control for wastewater treatment plants	Euro 3000	Duo-India grant to visit The Autonomous University of Barcelona (UAB), Spain			
6	Fabrication of carbon soot based reusable and robust nanofiber membranes for effective oil-water separation	Rs. 27.08 Lakhs	SERB, No. SB/OS/PDF040/ 2016-17, Dt. 15/02/2018.	Rs. 20,03 ,400/-	Rs. 2,10,110/-	Rs. 2,87,000/-
7	Development and Demonstration of Hydrogen Redox Flow Battery using Non-Precious Electrocatalysts SPARC 2019-2021, Rs.43.17 Lakhs.	Rs.43.17 Lakhs .	SPARC 2019-2021,	Rs. 80000 0/-	-	-
8	Effective Management of Process Slag from PCB smelting.	Rs. 10 Lakhs	C-MET Hyderabad. Dated 05-05-2021,			
9	Tackling textile	Rs.12.	The Royal	-	-	

	1 pollution using a 3D printed hybrid process,	36 Lakhs	Society, UK, IES\R1\201244 dated 30-03-2021.			
10.	Low-cost Biodegradable Polymer for Application in Food Packaging"	Rs. 23.414 Lakhs .	SERB, GoI, 2021,			Rs. 14,72,960/-
11	Green Solvents for Recycling Cathodes of Spent Li-Ion Batteries,	Rs. 26.76989 Lakhs .	SERB, GoI, 2021,			Rs. 18.55989 Lakhs
12	Development of process for the synthesis of cellulose nanocrystals from MCC, Tevoren Technologies LLP, 2021.	Rs.3.30 Lakhs .	Tevoren Technologies LLP, 2021,	Rs.50000/-		
13	Cavitation based dispersion of Boron nanoparticles into JP10 Fuel.	Rs. 9.95 Lakhs .	GTRE/MMG/BM R/1046/19/CAR S/A/19, dated 13th June, 2019	5,00,000/- 3rd Aug 2019	2,70,000/- 23rd Aug 2021	
14	Ultrasonic encapsulation of bioactive compounds to deliver in the food matrix.	Rs. 16 Lakhs	Indo-Russia DST- /INT/RUS/RFBR /P-324, 2018-20,	7,85,160/- 4th Oct, 2018		
15	Heat Transfer Enhancement in Plate-Fin Exchanger using Nano refrigerants,	Rs. 31 Lakhs .	Aeronautics R & D Board(ARDB), 2017			
16	Development of One-Shot Integrated Thick Sectioned Composite Parts using Semi-Cured Composite Laminates,	27.84 lakhs.	SERB/F/4360/2017-2018 dated- 04/08/2017 EMR Scheme, SERB, DST			
17	Design and Development of Passive Direct Methanol Fuel Cell integrated with Liquid Electrolyte	Rs. 19.46 Lakhs .	SERB, EMR/2016/0030 15 dated 24-03-2017,			

	for Portable Power Applications,					
	Covid 19		<a href="https://covid19-hpc-consortium.org/projects">https://covid19-hpc-consortium.org/projects</a> Department of energy, Lawrence Berkeley National Laboratory, USA.			
18	Demonstration of Technology for treatment of rain harvested water lakes in Warangal Telangana State	Rs. 44.41 lakhs	DST/TMD/EWO/WTI/2K19/EFW H/2019/111(G), dated 04 February 2021		14,15,421/- (I Instalment 11th February 2021 )	

## Patents (Filed, Published, Granted and Licensed)

### Published

**Shirish H. Sonawane**, Vikas Hakke, Narsimha. P, P. Dilip Kumar, Bhaskar Bethi, Low cost hybrid system based on hydrodynamic cavitation and hydrogel adsorption for textile dye wast. Application No.202141007302A, Publication Date : 26/02/2021

### Granted

**Prof Shirish H. Sonawane**, "PROCESS FOR PRODUCTION OF NANO SIZE IRON OXIDE PIGMENT" patent no.354749. (Awarded, year: 2021)

### Books and Book Chapters

Bhanvase, Bharat A., **Shirish Sonawane**, Vijay B. Pawade, and Aniruddha B. Pandit, eds. *Handbook of Nanomaterials for Wastewater Treatment: Fundamentals and Scale up Issues*. Elsevier, 2021.

Sonawane, Gunvant H., Prakash K. Labhane, and **Shirish H. Sonawane**. "New graphene-based nanocomposite for photocatalysis." In *Handbook of Nanomaterials for Wastewater Treatment*, pp. 181-207. Elsevier, 2021.

Sonawane, Shriram, Parag Thakur, **Shirish H. Sonawane**, and Bharat A. Bhanvase. "Nanomaterials for membrane synthesis:

Introduction, mechanism, and challenges for wastewater treatment." In *Handbook of Nanomaterials for Wastewater Treatment*, pp. 537-553. Elsevier, 2021.

Bethi, Bhaskar, **Shirish H. Sonawane**, Bharat A. Bhanvase, and Jaykumar B. Bhasarkar. "Introduction to nanomaterials for wastewater treatment." In *Handbook of Nanomaterials for Wastewater Treatment*, pp. 3-25. Elsevier, 2021.

Bhavsar, Nikhil D., Divya P. Barai, Bharat A. Bhanvase, and **Shirish H. Sonawane**. "Nanomaterials for treatment of air pollutants." In *Handbook of Nanomaterials for Wastewater Treatment*, pp. 313-339. Elsevier, 2021.

Bhanvase, Bharat A., V. B. Pawade, **Shirish H. Sonawane**, and A. B. Pandit. "Nanomaterials for wastewater treatment: Concluding remarks." In *Handbook of Nanomaterials for Wastewater Treatment*, pp. 1125-1157. Elsevier, 2021.

Ghodke, Shailesh A., Utkarsh Maheshwari, Suresh Gupta, **Shirish H. Sonawane**, and Bharat A. Bhanvase. "Nanomaterials for adsorption of pollutants and heavy metals: Introduction, mechanism, and challenges." In *Handbook of Nanomaterials for Wastewater Treatment*, pp. 343-366. Elsevier, 2021.

Borgaonkar, Avinash V., Ismail Syed, and **Shirish H. Sonawane**. "Effects of Lubrication on Tribological Properties of Composite MoS

2-TiO<sub>2</sub> Coating Material." In *Tribological Applications of Composite Materials*, pp. 267-281. Springer, Singapore, 2021.

Hakke, Vikas S., **Murali Mohan Seepana, Shirish H. Sonawane, Anand Kishore Kola, and Ramsagar Vooradi.** "Hybrid treatment technologies for the treatment of industrial wastewater." In *Water Pollution and Remediation: Heavy Metals*, pp. 211-241. Springer, Cham, 2021.

Hakke, Vikas S., **Shirish H. Sonawane,** Dipak Pinjari, S. Manigandan, and Shriram Sonawane. "Self-healing polymeric coating for corrosion inhibition and fatigue repair." In *Self-Healing Polymer-Based Systems*, pp. 473-493. Elsevier, 2020.

Yashawantha, Kyathanahalli Marigowda, Gaurav Gurjar, and **A. Venu Vinod.** "Stability and Thermal Conductivity of Ethylene Glycol and Water Nanofluid Containing Graphite Nanoparticles." In *Innovations in Sustainable Energy and Technology*, pp. 231-242. Springer, Singapore, 2021.

Anil, Govind, M. Siva, **S. Srinath, and G. Uday Bhaskar Babu.** "Designing of Fractional-Order PI/PID Controller by Meta-heuristic Algorithm Using PSO for PEM Fuel Cell." In *Intelligent Algorithms for Analysis and Control of Dynamical Systems*, pp. 125-131. Springer, Singapore, 2021.

Ranganayakulu, R., and **G. Uday Bhaskar Babu.** "A comparative analysis of fractional filter PID controller for integrating processes with time delay." In *Intelligent Computing in Control and Communication*, pp. 281-292. Springer, Singapore, 2021.

Radhika, Gandu, Akash Kumar Burolia, **Pandiyani Kuppusamy Raghu Raja, Seshagiri Rao Ambati,** Dipesh S. Patle, and **Uday Bhaskar Babu Gara.** "Energy saving in batch distillation for separation of ternary zeotropic mixture integrated with vapor recompression scheme: dynamics and control." *Chemical Product and Process Modeling* (2020).

Jayanti, S., Gundlapalli, R., Chetty, R., Jeevandoss, C.R., Ramanujam, K., Monder, D.S., Rengaswamy, R., **Suresh, P.V.,** Swarup, K.S., Varadaraju, U.V. and Gollangi, V., "Characteristics of an indigenously developed 1 kW vanadium redox flow battery stack." In *Proceedings of the 7th International*

*Conference on Advances in Energy Research*, pp. 923-929. Springer, 2021.

**Soundararajan, Rajmohan Kunju Vaikarar,** Sunita Varjani, Ramya Chandrasekaran, and Deepika Kandasamy. "Recovery of Gold and Other Precious Metals by Biosorption." *Sustainable Resource Management, Volume II: Technologies for Recovery and Reuse of Energy and Waste Materials 2*, pp. 463-488, 2021.

**Anjana P A,** Niju S, "Heterogeneous catalysts for Pyrolysis and Biodiesel Production "Wiley-Scrivener, Scrivener Publishing LLC, Beverly, USA. ISBN: 9781119791980, 2020.

### Conferences, workshops, FDPs, Webinars organized

**Dr. Murali Mohan Seepana, Dr. K. S. Rajmohan,** and Dr. Musthafa Muhammed (IISER Pune) Organized "Indo-UK Symposium on Green Energy for Sustainable Development" On the occasion of 150 Years Birth Anniversary of Mahatma Gandhi Sponsored by SPARC MHRD on August 28th 2020.

**Prof. Anand Kishore Kola, Dr. Kishant and Dr. Naresh** organised a five day FDP on "Teaching and Learning Strategies for Frontiers in Membranes for Wastewater Treatment (tssf-mwwt)", NIT Warangal, 8<sup>th</sup> March – 12<sup>th</sup> March 2021.

### Guest Talks/webinars delivered

**Prof. A. Sarath Babu,** Expert Lecture on "Process Simulation" organized by BV Raju Institute of Technology, on 09-06-2021.

**Prof. Anand Kishore Kola,** Nanofiltration Integrated with Photocatalysis for Environmental Applications" at the "ATAL" Faculty Development Program on "Nanotechnology for Green Processes and Sustainable Development" organized by Dept. of Chemical Engineering, VNIT Nagpur during 24-28 August 2020

**Prof. Anand Kishore Kola,** "Photocatalysis Integrated With Nanofiltration And Biofilms For Wastewater Treatment Applications" at TEQIP-III Sponsored Fiveday On-Line Faculty Development Program (FDP) on Recent Advances in

Nanotechnology, Catalysis and Biochemical Engineering (RANCBE- 2020) organized by Department of Chemical Engineering, Veer Surendra Sai University of Technology, Burla, Odisha during 16-20'Sept, 2020.

**Dr. Seshagiri Rao Ambati**, Multi-model control of nonlinear systems, in an FDP titled Recent Trends in Control System Engineering organized by NIT Patna on June 2, 2021.

**Dr. Seshagiri Rao Ambati**, Advanced control of wastewater treatment plants, in an FDP titled Recent Trends in Control System Engineering organized by NIT Patna on June 3, 2021.

**Dr. Seshagiri Rao Ambati**, Modelling and control of biological wastewater treatment plants, in the Fifth PG Conference on Control Systems and Automation organized by PSG College of Technology, Coimbatore on April 24, 2021.

**Dr. Venkata Suresh Patnaikuni**, 4-E Analyses of Chemical Looping Combustion based Coal-Fired Power Plants, AICTE online 2 week STTP on Sustainable Design of Chemical Process Plants by Using Aspen Plus and Aspen HYSYS simulating tools, Vellore Institute of Technology on Aug 13, 2020.

**Dr. Venkata Suresh Patnaikuni**, Application of CFD in the design of flow fields for PEM fuel cells, AICTE Sponsored One Week Online Short Term Training Programme on COMPUTATIONAL FLUID FLOW AND HEAT TRANSFER (CFFHT), - Phase I, GVP Engineering College, Visakhapatnam on Aug 29, 2020.

**Dr. Venkata Suresh Patnaikuni**, CFD Simulation of Fuel Reactor of Chemical Looping Combustion of Coal, AICTE Sponsored One Week Online Short Term Training Programme on COMPUTATIONAL FLUID FLOW AND HEAT TRANSFER (CFFHT) - Phase II, GVP Engineering College, Visakhapatnam on Sep 22, 2020.

**Dr. Venkata Suresh Patnaikuni**, Enhanced Cross-flow Split Serpentine Flow Field (ECSSFF) Design for PEM Fuel Cells, SPARC workshop on Fuel Cell Technology and its

Research Opportunities, NIT Warangal on Jan 05, 2021.

**Dr. Murali Mohan Seepana**, Fuel Cell Technology: Evolution and Key challenges, in Faculty Development Program (FDP) on Fuel Cell Technology: Progress, Challenges and Future Prospects at Government Engineering College, Kozhikode from 22-27th March 2021.

**Dr. P. Sampath Kumar**, Energy Storage Devices in an Online Workshop on Nano-electronic devices and their Applications on March 24, 2021, IIIT Kalyani, West Bengal, India.

**Dr. P. Sampath Kumar**, Super capacitors based on binary and ternary nano composites of polyaniline, graphene and metal oxide electrode materials" for PG Students of Nanotechnology, organized by Centre for Nano Science and Technology, IST, JNTUH, Hyderabad on 17th Sep 2020.

**Dr. P. Sampath Kumar**, Super capacitors based on binary and ternary nano composites: Some approaches, Challenges and Opportunities for the 4 Day FDP on " Challenges and Opportunities of Energy and Sensor Application" Organized by Department of Electrical and Electronics Engineering, JNTUA , Anantapur on 23rd Sep 2020.

**Dr. Kishant Kumar**, Application of computer simulation in adsorption and diffusion of small gaseous molecule inside the porous matrix in the North Eastern Regional Institute of Science and Technology, Arunachal Pradesh (Fully funded by MHRD, INDIA).

**Dr. Anjana PA**, Role of catalyst and electro catalyst in Energy applications, for FDP on Challenges and opportunities of energy and sensor applications organized by JNTUA College of Engineering, Ananthapur on 25th September 2020.

**Dr. Anjana PA**, Heterogeneous catalytic reaction mechanism: From bulk to surface for Webinar at department of Chemical Engineering, Amal Jyothi Institute, Kerala on 19th August, 2020.

**Dr. Anjana PA**, Critical descriptors for heterogeneous catalysis for FDP on Nano Science and Technology (Energy,

Environment and healthcare) organised by Sathyabama Institute of Science and Technology in association with Indian Institute of Information Technology, Design and manufacturing (IIITDM) Kancheepuram on 4th July 2020.

### **New lab established/ Equipment and Software procured**

- Microwave reactor- (5 Lakhs)
- Tubular Furnace-( 8 Lakhs)
- Electrochemical Workstation (7 Lakhs)
- UV-Visible Spectroscopy( 2 lakhs)
- Vacuum Oven ( 2 lakhs)
- Tubular Furnace (1.5 Lakhs)
- Fume Hood ( 1.5 Lakhs)
- Workstations ( 3 No.s)-11 lakhs
- Centrifuge (1)-0.25 Lakhs

### **Awards/ Recognitions/ Achievements**

**Prof Shirish H. Sonawane**, Recipient of the prestigious "Hindustan Dorr-Oliver Award" for Excellence in Use of Science & Technology in Rural Development , IICHe,2020.

**Prof Shirish H. Sonawane**, was awarded a fellowship from The Polish National Agency for Academic Exchange (NAWA) Poland for the International Visiting fellowship under the Ulm Program 2020.

**Prof. Anand Kishore Kola**, awarded with Best Researcher Award by VDGOD Professional Association, Chennai at 10th International Scientist Awards on Engineering, Science and Medicine during 26-27, Sep'2020, Hyderabad, India.

**Prof. Anand Kishore Kola** was awarded with Upadhyaya Ratna Award'2020 by Sarvejana Sukhino Bhavanthu Organization, Hyderabad.

### **PhD Research guidance (Completed during the academic year)**

**Patil Harshal Somnath** (Roll No. 715068), completed his Ph. D with title "Hydrodynamics of Stirred Tank using

Radioactive Particle Tracking (RPT) Technique and CFD" under the guidance of Prof. A. Venu Vinod, Jan, 2021.

**Abdulla Sheikh** (Roll No. 714145), completed his Ph. D with title "Performance Evaluation of PEM Fuel cell incorporating Enhanced Cross-flow Split Serpentine Flow Field Design - Computational Study" under the guidance of Dr. P. V. Suresh, Oct, 2020.

**Surywanshi Gajanan Dattarao** (Roll No.716040), completed his Ph. D with title "-E (Energy, Exergy, Ecological and Economic) analyses of Chemical-Looping Combustion based Coal Fired Power Plants for CO2 Capture and Utilization" under the guidance of Dr. P. V. Suresh, June, 2021.

**Pagidi Aruna** (Roll No.714147), completed his Ph. D with title "Development of high temperature composite membranes for Direct Methanol Fuel Cell (DMFC)" under the guidance of Dr. Murali Mohan Seepana, Dec, 2020.

**Shalini** (Roll No. 716160), completed his Ph. D with title "Development of sustainable integrated fluidized bed bioreactor and microbial fuel cell system using agro-biowaste derived products for Congo red degradation" under the guidance of Prof HAG Y Pydisetty, Dec, 2020.

**Potla Durthi Chandrasai** (Roll No. 716046), completed his Ph. D with title "In silico and in vitro studies on L-Glutaminase from novel Bacillus sp., mutant isolated from Ocimum tenuiflorum" under the guidance of Dr. R. Satish Babu & Prof.K.Anand Kishore, April, 2021.

### **International conferences attended**

**Narsimha. Pandi, Shirish H Sonawane, K. Anand Kishore**, presented a poster entitled "Ultrasound assisted synthesis of CNC-HNT-PANI nanocomposite for Supercapacitor application", International Conference on Multifunctional Electronic Materials & Processing (MEMP-2021) Pune, March 8-10, 2021 through virtual platform.

**Dr. Seshagiri Rao Ambati** attended International Water Association (IWA) Digital



World Water Congress 2021 during May 24 - June 4.

### Details of students joined in higher educational institutes

**Shaurya Verma**, M.Tech. , Joined Ph.D. Chemical Engineering at Indian Institute of Technology Roorkee, July, 2021.

**Arvind Kumar Mishra**, M.Tech. , Joined Ph.D. Process Control at Indian Institute of Technology Roorkee, July, 2021.

**Aishwarya S Rao**, M.Tech. , Joined Ph.D. Chemical Engineering at Indian Institute of Sciences Bangalore, July, 2021.

**Ashutosh Kumar Singh**, M.Tech. , Joined Ph.D. Process Control at Indian Institute of Technology Bombay, July, 2021.

**Vivek Kumar**, M.Tech. , Joined Ph.D. Process Control at Indian Institute of Technology Roorkee, July, 2021.

**Dibyajyoti Baidya**, M.Tech. , Joined Ph.D. Process System Engineering at Indian Institute of Technology Bombay, July, 2021.

**Sweksha Jain**, M.Tech. , Joined Ph.D. Systems and Control Engineering at Indian Institute of Technology Bombay, July, 2021.

**Shweta Malviya**, M.Tech. , Joined Ph.D. Chemical Engineering at Indian Institute of Technology Kharagpur, July, 2021.

**Arjun Patel**, M.Tech. , Joined Ph.D. Chemical Engineering at University of Virginia, Virginia, July, 2021.

### Please fill the table (All student information (UG/PG/PhD) for NIRF application

S. No.	Roll No.	Name of the Student	Placement Details	Higher Studies
1.	176101	Abbugari Praneeth	Byju's	
2.	176102	Adarsh Raj	Dr.Reddy	
3.	176103	Adloori Yashwanth	K-12 Techno Services Pvt. Ltd	
4.	176105	Ankit Chouhan	Byju's	
5.	176106	INA SRI AREPALLE	PrimEra	
6.	176107	Ashutosh Singh	PharmaAce	
7.	176108	Sonu Bhagat	Byju's	
8.	176109	Challapalli Datta Charan	Dr.Reddy	
9.	176110	Dasari Sri Surya Tanvija	ExxonMobil	
10.	176112	ANVESH DONTULA	MasterCard	
11.	176114	John Guguloth	Byju's	

12.	176116	HIMANSHU SHARMA	Suntec	
13.	176117	Jagilapu Kalyan Kumar	Byju's	
14.	176118	Nomalatha K	Mondelez	
15.	176119	Kalidindi Sri Vaishnavi	-	Masters in Management and Innovation, ESSEC France
16.	176120	Shashidhar	Fractal Analytics	
17.	176122	Aditi Jain	O9 Solutions	
18.	176124	Kumar Abhishek	Axis Bank	
19.	176126	MAYANK KUMAR	BRIDGEi2i Analytics	
20.	176127	Miriyala Sai Teja	Dr.Reddy	
21.	176128	NEHA KUMARI	Eversana	
22.	176129	Ayaan Ali	O9 Solutions	
23.	176130	Sindhuja Pachika	K-12 Techno Services Pvt. Ltd.	
24.	176132	Pranav Khobragade	ITC	
25.	176138	Satyam Sharma	Merilytics	
26.	176140	Shravani Mangu	Aditya Birla Group	
27.	176141	Praveen Singi	Zenoti	
28.	176142	Sumeet Upadhyay	SRF Chemicals	
29.	176143	Sunil Kumar	Standav	
30.	176144	Sushil Chaudhari		M.Tech/IIT Bombay
31.	176145	Tankala Sai Datta Akhil	Blackbuck	
32.	176146	TALARI ARAVIND	Dalmia Cements	
33.	176147	Timmasarathi SAI TEJA	GAIL India Ltd	
34.	176148	VAIBHAV GOYAL	Oracle	
35.	176149	Valluri Venkata Raghavendra Praveen	PharmaAce	
36.	176151	SHERLIE VERGHESE	ExxonMobil	
37.	176152	Vijay Kumar Kanwadiya	Zycus	
38.	176153	Yash Vardhan SINGH	Zycus	

39.	176201	ABHISHEK GUPTA	tredence analytics	
40.	176202	Adelli Keerthi	Fractal Analytics	
41.	176204	Ankam Sriharshini	Fractal Analytics	
42.	176206	Asad Ahmed	Semut SG	
43.	176210	Vivek Shastry Devalla		M.S Biochemical Eng./University of California, San Diego
44.	176212	Chandana Gattupally	Dr.Reddy	
45.	176214	Arun Kumar GSS	Dr.Reddy	
46.	176215	Gurrapu Yashaswi Anuraag Babu	CollegeDunia	
47.	176216	Sai Sampath	GAIL India Ltd	
48.	176217	Joanna Renji		M.S Chemical Eng./New Jersey Institute of Technology
49.	176218	Kadagala Harendra Naidu	GAIL India Ltd	
50.	176219	Akhila Kalivemula	Coromandel	
51.	176220	PARDHU KASAM	Coromandel	
52.	176222	Sivani Kolleboyina	Deloittee	
53.	176223	Srikala Kiranmayee Kota	MasterCard	
54.	176225	Marapatla Cindy Mercy Joycee	Vedanta	
55.	176227	Musaib Khan	JK Tyres	
56.	176228	Gnaneshwar Reddy	tredence analytics	
57.	176229	Lahari Sumanjali Pabbisetty	ExxonMobil	
58.	176230	Pankaj Yadav	Byju's	
59.	176231	POTHUGANTI SANTHOSH	Lentra AI	
60.	176232	Pranita Kadam	HUL	
61.	176233	Priyadarshini Biswal	Fractal Analytics	
62.	176234	Lasya Puppala	Fractal Analytics	
63.	176235	Rachamoni Ravichandra Kumar	GAIL India Ltd	

64.	176236	Sai Sree Ramachandrani	HUL	
65.	176237	Deekshith Resu	CollegeDunia	
66.	176239	Shashi Pal	ABG	
67.	176240	Shivansh Gupta	CollegeDunia	
68.	176241	SHREYANS JAIN	ZS DS	
69.	176242	Hrushikesh Sriramaneni	Byju's	
70.	176243	SUMIT SINGH	Neosoft	
71.	176246	T Anirudh	ABG	
72.	176247	GANESH TALLURI	Deloittee	
73.	176248	Yaska Vadlamudi	Dalmia Cements	
74.	176249	Vaibhav Peddi	K-12 Techno Services Pvt. Ltd.	
75.	176250	Vanessa Soares	SRF Chemicals	
76.	176251	VEERAMALLU ANANYA	LnT	
77.	176252	Vibhash Garg	ExxonMobil	
<b>M.Tech Program</b>				
1.	196501	Aishwarya Rao	PharmaAce	Ph.D. Chemical Engineering at IISc Bangalore
2.	196502	Alisha Joshi	Deccan Fine Chemicals	
3.	196503	Arjun Patel	-	Ph.D. Chemical Engineering at University of Virginia
4.	196505	Boddani Chandaneswar Kumar	Deccan Fine Chemicals	
5.	196511	Pakala Shyamprasad	Deccan Fine Chemicals	
6.	196514	Shaurya Verma	-	Ph.D. Chemical Engineering at IIT Roorkee
7.	196516	Shweta Malviya	-	Ph.D. Chemical Engineering at IIT Kharagpur
8.	196517	Sunny Sherawat	PharmaAce	-
9.	196553	Annada Prasad Mahali	Byju's	-

10.	196554	Arvind Kumar Mishra	-	Ph.D. Systems & Control at IIT Roorkee
11.	196555	Ashutosh Kumar Singh	-	Ph.D. Process Control at IITB
12.	196558	Dibyajyoti Baidya	-	Ph.D. Process System Engineering at IITB
13.	196564	Sweksha Jain	-	Ph.D. Systems and Control Engineering at IITB
14.	196565	Vivek Kumar	-	Ph.D. Systems & Control at IIT Roorkee

### Department Outreach Activities

**Dr. Shirish Sonawane**, Editorial Board Member for Journal of Ultrasonic Sonochemistry, 2021, Elsevier, Impact factor 6.8.

**Dr. Anand Kishore Kola**, Director's Nominee in the State Level Committee (SLC) for finalization of Best Teacher Awards '2020- Technical Education, GoT.

**Dr. Seshagiri Rao**, Associate Editor of CPPM on June 10th 2021, It is a quarterly journal published by [De Gruyter](#) since 2006 and it covers theoretical and applied research on the product and process design, modelling, simulation, and optimization.

### Department Association/Students Clubs Activities

ChEA and IChE-SC organized the **Virtual Inaugural Ceremony** on 7th November, 2020 through Google-meet and is inaugurated by Shri. K Ramalingam, Director, SVL Engineering Services Pvt. Ltd. Chennai.

ChEA conducted a **TEQIP Sponsored Expert Lecture** by titled, "An Introduction to Hazop/ What Went Wrong and Lessons Learnt." By Shri. K Ramalingam, Director, SVL Engineering Services Pvt. Ltd.

ChEA & IChE-SC has conducted an event "**Placements Confab**" to generate awareness about Internship and Placement to the Students.

ChEA & IChE-SC has conducted "**Chem-E-Cross**" a series of events on 15th, 22nd and 29<sup>th</sup> November on fun filled Quiz and puzzles on basic concepts related to chemical engineering to the Students.

ChEA & IChE-SC, National Institute of Technology, Warangal has conducted the event. '**Resume Building Workshop**' on 29th November, 2020.

ChEA conducted '**Know your Acads**' on 9th December. The event gave an overview of the academic structure, from grading to scholarships, from sliding to useful skills.

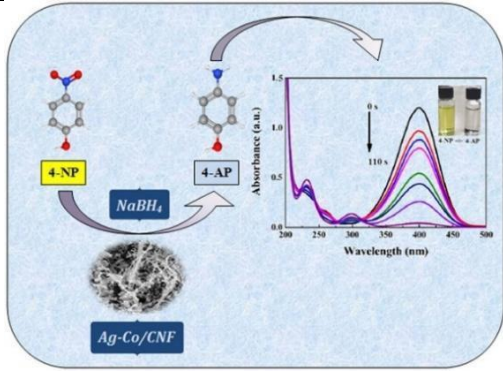
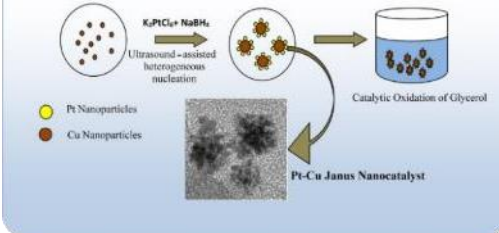
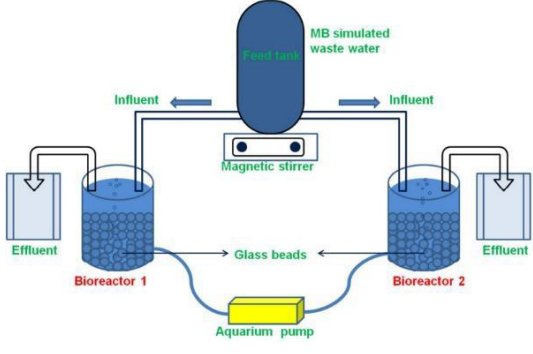
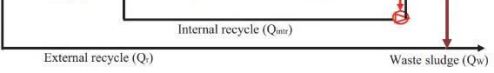
ChEA in collaboration with the Fitness Club conducted the event on **'Walk through the Year'** on 28th-30th December 2020.

ChEA conducted **"Unravel the Puzzle"** event on 17th January 2021. The event had fun puzzles around environment, sustainability and pollution, designed to create awareness.

ChEA & IChE-SC in collaboration with URA and Innovation Garage, CII conducted the event **'Research Wrap Up'** on 31st March, 2021.

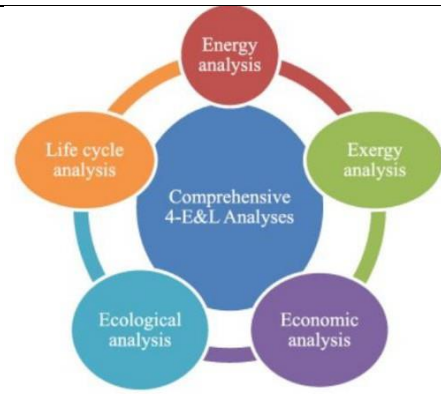
ChEA & IChE-Student Chapter conducted a **'membership drive'** session for IChE at 6PM on 9th April 2021.

## Highlights of the department

	
<p>Synthesis of bimetallic Ag–Co nanoparticles supported on cellulose nanofibers (CNFs) for application in catalytic activity.</p> <p><a href="https://doi.org/10.1016/j.jece.2021.105719">doi.org/10.1016/j.jece.2021.105719</a></p>	<p>Selective Oxidation of Glycerol: A Biomass-Derived Feedstock Using the Pt–Cu Janus Catalyst for Value-Added Products</p> <p><a href="https://doi.org/10.1021/acs.iecr.0c04626">doi.org/10.1021/acs.iecr.0c04626</a></p>
 <p>Schematic illustration of the experimental setup for simulated Methylene Blue (MB) dye wastewater treatment</p>	 <p>Supervisory Control Configuration in Benchmark Simulation Model 1.</p>
<p>Assessment of the aerobic glass beads fixed biofilm reactor (GBs-FBR) for the treatment of simulated methylene blue wastewater</p> <p><a href="https://doi.org/10.1038/s41598-020-77670-2">doi.org/10.1038/s41598-020-77670-2</a></p>	<p>Supervisory control configurations design for nitrogen and phosphorus removal in wastewater treatment plants</p> <p>DOI: 10.1002/wer.1512</p>



Experimental setup



4-E&L analyses.

Natural convection heat transfer using water-based nanofluid in a shell and helical coil heat exchanger.

[doi.org/10.1007/s11696-020-01490-x](https://doi.org/10.1007/s11696-020-01490-x)

CO<sub>2</sub> capture and utilization from supercritical coal direct chemical looping combustion power plant – Comprehensive analysis of different case studies.  
[doi.org/10.1016/j.apenergy.2021.117915](https://doi.org/10.1016/j.apenergy.2021.117915)



## Summary

S.No.	Activity	Number
<b>1</b>	<b>Publications (Peer Reviewed Journals/ conferences)(SCOPUS/SCI)</b>	
	International Journals	42
<b>2</b>	<b>Funded Research Projects/SPARC projects (2020-21)</b>	
	Completed Projects(109.86 Lakhs)	5
	Ongoing Projects (Rs 281.4 Lakhs)	14
<b>3</b>	<b>SPARC Project Workshops</b>	1
<b>5</b>	<b>Patents</b>	2
	Awarded	1
	Published	1
<b>6</b>	<b>Books and Book Chapters</b>	17
	Books	1
	Book Chapters	16
<b>7</b>	<b>Conferences/ Workshops/GIAN courses/FDPs Conducted</b>	3
<b>8</b>	<b>Guest talks/ Webinars delivered</b>	18
<b>9</b>	<b>New Labs Established (Equipment/Software Procured)</b>	<i>Rs.38 Lakhs</i>
<b>10</b>	<b>Awards/Recognitions/Achievements</b>	4
<b>11</b>	<b>Research Guidance (Completed in 2020-21)</b>	6
<b>13</b>	<b>Students Achievements</b>	
	Placements	

	B.Tech.	72.2%
	M.Tech.	22.2%
	Higher Education (M.Tech, PhD at IITs & Abroad)	10.2 %
<b>14</b>	<b>Chemical Engineering Association Activities</b>	10
<b>16</b>	<b>Outreach Programmes</b>	3

# DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING


## Brief History of the Department, Academic Programs




The Department of Computer Science & Engineering was established in the year 1991. The department offers high quality undergraduate, postgraduate and doctoral programs. The B. Tech (Computer Science and Engineering) program was started in the year 1983 with an intake of 20 students. The intake was subsequently increased to 120 in 2008. M. Tech (Computer Science and Engineering) program was started in 1987 with an intake of 18 and subsequently increased to 20 in 2008. M. Tech (Information Security) was introduced in the year 2008 Under ISEAP sanctioned by Ministry of Communication and Information Technology (MCIT), DOE, GOI, New Delhi with intake of 20. Later, it was renamed as Computer Science and Information Security. The Master of Computer Applications (MCA) program was started in 1986 with an intake of 30 and increased to 46 from 2008. B.Tech, M.Tech (CSE) and M.Tech (CSIS) programs were accredited in 2014 by NBA as per Washington Accord.









The department has distinguished and committed faculty members with PhD from reputed institutes. It has close rapport with MICROSOFT, TCS, INFOSYS, ORACLE, TRDDC-Pune, SUN Microsystems, EMC<sup>2</sup>, ACCENTURE, C-DAC, MOTOROLA, HONEYWELL, NOVELL, PHILIPS, SAMSUNG, and IBM-Bangalore. The department has MOUs with TCS, IBM, C-DAC and INFOSYS, for training students and faculty on latest cutting edge technologies and also to pursue Research and Development activities. The Department has been selected as a Remote Center under Information Security Awareness Project (ISEAP) Phase II, MCIT Dept of IT. Along with department of ECE, it is associated in E&ICT Academy project sanctioned by Department of Electronics and Information Technology, Govt of India for Rs.25 crores to train faculty from Engineering and Polytechnic Streams across Telangana, Andhra Pradesh, Karnataka States and Pudicherry, Andaman & Nicobar islands and Lakshadweep UTs.



## Faculty Details:

Sl. No.	Name of the Faculty Member	Designation	Highest Qualification	Research Interests	Photograph
1	<b>##Prof. DVLN Somayajulu</b>	Professor (HAG)	Ph.D.	Databases, Information Extraction & Big Data	
2	<b>Prof. B. B. Amberker</b>	Professor	Ph.D.	Cryptosystems and Signature schemes	
3	<b>Prof. S G Sanjeevi</b>	Professor	Ph.D.	Machine Learning and Soft Computing	
4	<b>Prof. R.B.V. Subramanyam</b>	Professor	Ph.D.	Data Mining, Big Data Analytics	
5	<b>Prof. P. Radha Krishna</b>	Professor and head	Ph.D.	Data Mining	
6	<b>Dr. K. Ramesh</b>	Associate Professor	Ph.D.	Architectures & Coding infrastructure s in CNS	
7	<b>Dr. Ch. Sudhakar</b>	Associate Professor	Ph.D.	Cloud Computing, Distributed Systems	
8	<b>Dr. S. Ravi Chandra</b>	Associate Professor	Ph.D.	Software Engineering, Software Architecture	
9	<b>Dr. R. Padmavathy</b>	Associate Professor	Ph.D.	Cryptanalysis and Network Security	
10	<b>Dr. Rashmi Ranjan Rout</b>	Associate Professor	Ph.D.	Computer Networks, Mobile Computing	

11	<b>Dr. T. Ramakrishnu</b>	Assistant Professor	Ph.D	Association Rule Mining; Distributed Data Analysis	
12	<b>Dr. Raju Bhukya</b>	Assistant Professor	Ph.D	Software Engineering, Computer Organization	
13	<b>Dr. U.S.N. Raju</b>	Assistant Professor	Ph.D	Computer Vision and Image Processing	
14	<b>Dr. K.V. Kadambari</b>	Assistant Professor	Ph.D	Computational Neuroscience	
15	<b>Dr. P. venkata Subba Reddy</b>	Assistant Professor	Ph.D	Algorithms and Graph Theory	
16	<b>Dr. Manjubala Bisi</b>	Assistant Professor	Ph.D	Software reliability modelling	
17	<b>Dr. Sujit Das</b>	Assistant Professor	Ph.D	Fuzzy Set, Hybridized Fuzzy Soft Set	
18	<b>Dr. Earnest Paul Ijjina</b>	Assistant Professor	Ph.D	Computer Vision, Video Content Analysis	
19	<b>Dr. IIaiah Kavati</b>	Assistant Professor	Ph.D.	Pattern recognition, image processing	
20	<b>Dr. Sushil Kumar</b>	Assistant Professor	Ph.D	Soft Computing, Metaheuristics	
21	<b>Dr. M Sandhya</b>	Assistant Professor	Ph.D.	Biometrics, Pattern Recognition	

22	<b>Dr. E Suresh Babu</b>	Assistant Professor	Ph.D.	Wireless Network	
23	<b>Dr. Sanjaya Kumar Panda</b>	Assistant Professor	Ph.D.	Cloud Computing	
24	<b>Dr. M Srinivas</b>	Assistant Professor	Ph.D.	Image Processing, Medical Imaging	
25	<b>Dr. Balaprakash Rao Killi</b>	Assistant Professor	Ph.D.	Software-Defined Networking	
26	<b>Dr. Venkataswara Rao Kagita</b>	Assistant Professor	Ph.D.	Recommender Systems, Machine Learning	
27	<b>Dr. Ramalingaswamy Cheraku</b>	Assistant Professor	Ph.D.	Soft Computing, Machine Learning	
28	<b>Dr. Sangharatna Godbole</b>	Assistant Professor	Ph.D.	Program Analysis and Software Testing	
29	<b>Prof. T. Ramesh</b>	Visiting Professor	Ph.D.	Theoretical Computer Science	



## Journal Publications

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Swadhin Kumar Barisal, Arpita Dutta, Sangharatna Godbole, Bibhudatta Sahoo, and Durga Prasad Mohapatra. , MC/DC guided test sequence prioritization using firefly algorithm., Evol. Intell., Springer 14(1):105-118, 2021, SCOPUS,

## Conference publications

Lingam, G., Rout, R. R., Somayajulu, D. V. L. N., & Das, S. K., Social Botnet Community Detection: A Novel Approach based on Behavioral Similarity in Twitter Network using Deep Learning, Proceedings of the 15th ACM Asia Conference on Computer and Communications Security Oct. 2020, (pp. 708-718).

Karmakar, S., & Krishna, P. R., Leveraging Latent Representations of Speech for Indian Language Identification, 17th International Conference on Natural

Language Processing (ICON 2020), 334-340, December 2020, Patna, India. 18-21.

Belagur, H., Reddy, S., Jithendra, B., & Krishna, P. R., Multiheaded Hierarchical Encoder Decoder for Analyzing Multimodal Conversations, IEEE CCEM (Cloud Computing in Emerging Markets) Pre-conference Workshop 2021, February 2021.

Kumar, N., Krishna, P. R., & Kumar, V., Recommendation Based on Visual Co-occurrence, IEEE CCEM (Cloud Computing in Emerging Markets) Pre-conference Workshop 2021, February 2021

Bisi. M., An ANN-TLBO model to predict cumulative number of failures in software, IEEE HYDCON, 2020, hyderabad, india

Bisi. M., ANN-PSO Approach on Logistic Model based Software Reliability Prediction, IEEE CICT, 2020, IIITDM Kancheepuram, Chennai, india

Bisi M. , Divija A. , Namala S., and Sarap R., CNN-BPSO Model for Multi Classification of Tweets, IEEE CICT, 2020, IIITDM Kancheepuram, Chennai, india

Bisi M. and Keska K., CNN-BPSO Approach to Select Optimal Values of CNN Parameters for Software Requirements Classification, IEEE INDICON, 2020, Netaji Subhas University of Technology, delhi, india

Avinash Potluri, S. Nagesh Bhattu, N. V. Narendra Kumar, and R. B. V. Subramanyam, Design Strategies for Handling Data Skew in MapReduce Framework, ICICIT 2019, LNNS 98, pp. 240-247, 2020

P. Chakradhar and P. Venkata Subba Reddy, Algorithmic Aspects of Total Roman Domination and Total Double Roman Domination in Graphs, 7th Annual International Conference on Algorithms and Discrete Applied Mathematics (CALDAM 2021), February 11-13, 2021, IIT Ropar, India

Jinish Raiyarela, Pratyush Chaudhary and P. Venkata Subba Reddy, A Linear Algorithm for Super Domination in Trees, International Conference on Mathematical Techniques in Engineering Applications, 4th International Conference on Mathematical Techniques in Engineering Applications (ICMTEA2020), Graphic Era Deemed to be University, December 4-5, 2020, Dehradun, India.

Attyuttam Saha and P. Venkata Subba Reddy, A Note on Roman  $\{2\}$ -Domination Number of  $k$ th Power of Paths and Cycles, 28th International Conference of Forum for Interdisciplinary Mathematics: Synergies in Computational, Mathematical, Statistical and Physical Sciences, November 23-27, 2020, Chennai, India

P. Chakradhar and P. Venkata Subba Reddy, Perfect Double Roman Domination in Graphs, 28th International Conference of Forum for Interdisciplinary Mathematics: Synergies in Computational, Mathematical, Statistical and Physical Sciences, November 23-27, 2020, Chennai, India

Earnest Paul Ijjina, Aniruddha Srinivas Joshi, and Goutham Kanahasabai, Detection of Customer Interested Garments in Surveillance Video using Computer Vision, 11th International Conference on Computing, Communication and Networking Technologies (ICCCNT), India, 1-3 July 2020

Earnest Paul Ijjina, Goutham Kanahasabai, and Aniruddha Srinivas Joshi, Deep Learning based approach to detect Customer Age, Gender and Expression in Surveillance Video, 11th International Conference on Computing, Communication and Networking Technologies (ICCCNT), India, 1-3 July 2020

Earnest Paul Ijjina, Aniruddha Srinivas Joshi, Goutham Kanahasabai, and Keerthi Priyanka P, Customer Analytics using Surveillance Video, 11th International

Conference on Computing, Communication and Networking Technologies (ICCCNT), India, 1-3 July 2020

Uma Sankararao Varri, Syam Kumar Pasupuleti, KV Kadambari, Key-Escrow Free Attribute-Based Multi-Keyword Search with Dynamic Policy Update in Cloud Computing, 2020

Rahul Kumar, Kamalakanta Sethi, Nishant Prajapati, Rashmi Ranjan Rout, Padmalochan Bera, Machine Learning based Malware Detection in Cloud Environment using Clustering Approach, 2020

Bedatrayee Ghosh, Priyanka Parimi and Rashmi Ranjan Rout, Improved Attribute-Based Encryption Scheme in Fog Computing Environment for Healthcare Systems, 2020

Lingam Greeshma, Rashmi Ranjan Rout, DVLN Somayajulu, Sajal K. Das, Social Botnet Community Detection: A Novel Approach Based on Behavioral Similarity in Twitter Network Using Deep Learning, 2020

Sonowal, A. Idupulapati, D. Booravilli, P. Parimi and Rashmi Ranjan Rout, An Improved Model for Dynamic Opinion Updates in Online Social Networks, 2020

Hala Sadek Ali, Rashmi Ranjan Rout, Priyanka Parimi, Sajal K. Das, Real-Time Task Scheduling in Fog-Cloud Computing Framework for IoT Applications: A Fuzzy Logic-based Approach, 2021

Ramakant Kaurav, Rashmi Ranjan Rout, Satish Vemireddy, Blockchain for Emergency Vehicle Routing in Healthcare Services: An Integrated Secure and Trustworthy System, 2021

Sumanth Naga, R.N. Likith, U.S.N. Raju, Content Based Image Retrieval by using Different CNNs, AICTE sponsored National E-Conference on Advances in Computer Vision, Artificial Intelligence and Computer Applications (NECACAC-2020), 28th November 2020.

Aditya Narayan Singh, Jose Mrudula, Ritik Pandey, Sujit Das, A Comparative Study of Four Genetic Algorithm based Crossover Operators for Solving Travelling Salesman Problem, Proceedings of International Conference on Advances in Systems, Control and Computing (AISCC), Jaipur, February 27-28, 2020

Sanjib Kumar Nayak, Sanjaya Kumar Panda, Satyabrata Das and Sohan Kumar Pande, A Renewable Energy-Based Task Consolidation Algorithm for Cloud Computing, Electric Power and Renewable Energy Conference, LNEE, NIT Jamshedpur, 29th and 30th May 2020

Sanjib Kumar Nayak, Sanjaya Kumar Panda and Satyabrata Das, Renewable Energy-Based Resource Management in Cloud Computing: A Review, First International Conference on Advances in Distributed Computing and Machine Learning, VIT Vellore, 30th and 31st January 2020

Santosh Kumar Sahu, Durga Prasad Mohapatra and Sanjaya Kumar Panda, A Self-Trained Support Vector Machine Approach for Intrusion Detection, First International Conference on Advances in Distributed Computing and Machine Learning, VIT Vellore, 30th and 31st January 2020

Sunkuru Gopal Krishna Patro, Brojo Kishore Mishra, Sanjaya Kumar Panda, Raghvendra Kumar and Atithee Apoorva, Hybrid Social Recommender Systems for Electronic Commerce: A Review, International Conference on Computer Science, Engineering and Applications, GIET, Gunupur, 13th and 14th March 2020

Arpita Dutta, Sangharatna Godbole, MSFL: A Model for Fault Localization Using Mutation-Spectra Technique, In: Przybyłek A., Miler J., Poth A., Riel A. (eds) Lean and Agile Software Development. LASD 2021. Lecture Notes in Business Information Processing, vol 408. Springer, Cham.

[https://doi.org/10.1007/978-3-030-67084-9\\_10](https://doi.org/10.1007/978-3-030-67084-9_10)

Sangharatna Godbole, Optimal MC/DC Test Case Generation, 2nd Software Engineering Research in India (SERI) – 2020, Online Event, 9 - 11 July, 2020

Sangharatna Godbole, Jaffar, Joxan, and Rasool Maghareh, Verifying Reactive Systems via Symbolic Execution with Incremental Deepening, 9th Rigorous Examination of Reactive Systems (RERS)-2020, Greece

Debanjan Pathak, U.S.N.Raju, Sukhdev Singh, G Naveen, K. Anil, Content Based Image Retrieval Using Statistical Color Occurrence Feature on Multiresolution Dataset, International Conference, FICTA 2020, 4th-5th January 2020, NIT Surathkal, India

Sweta Panigrahi, U.S.N.Raju, Pranay Raj R, Sindhu Namulamettu Vishnupriya Thanda, Pedestrian Detection: Unification of Global and Local Features, International Conference on Innovations in Computational Intelligence and Computer Vision, ICICV 2020, Manipal University Jaipur, 17th-19th January 2020.

Koratamaddi, P., Wadhvani, K., Gupta, M., Sanjeevi, S.G., A Multi-Agent Reinforcement Learning Approach for Stock Portfolio Allocation, ACM

International Conference Proceeding Series, 2020, pp. 410

Shalini, P.V., Radha, V., Sanjeevi, S.G.. DDoS Attack Detection in SDN Using CUSUM, Lecture Notes on Data Engineering and Communications Technologies, 2021, 56, pp. 301–309

### Funded Research Projects

#### Research R&D Projects (2 New Sanctioned)

“Dynamic and Static Security Analysis of Large Power System using High Performance” Dr. Ram Krishan, Dr. Dileep, **Dr. Sanjaya Kumar, Dr. Venkateswara Rao K**, NIT/EED/DRP/SERB/2020/, Budget: 45.58 Lacs, NSM-DST, 2 Years  
 “Blockchain-Enabled Digital Identity and Authentication for Dynamic KYC (Know Your Customer) in Banking and Finance” Dr. Rakesh Tripathi (Dept. of IT, NIT Raipur), **Dr. Balaprakash Rao**, from PRAYAS scheme of Technology Incubation Hub (TIH) of National Mission on Interdisciplinary Cyber Physical Systems, IIT Bhilai for INR 8.3 Lakhs.

#### Research R&D Projects (Ongoing)

“Disease prediction based on various pattern recognition using Neural Networks” **Dr Raju Bhukya**, EEQ/2019/000132, Budget INR 3050000, SERB, Duration 3 years.

S. No.	Title	Total Amount sanctioned	Funding agency and Project No.	Installment 1, 2018-2019	Installment 2, 2019-2020	Installment 3, 2020-2021
1	Dynamic and Static Security Analysis of Large Power System using High Performance	45.58 Lakhs	NSM-DST and NIT/EED/DRP/SERB/2020/	-	-	45.58 Lacs
2	Blockchain-Enabled Digital Identity and Authentication for Dynamic KYC (Know Your Customer) in Banking and Finance	8.3 Lakhs	PRAYAS scheme of Technology Incubation Hub (TIH) of National Mission on Interdisciplinary Cyber Physical Systems, IIT Bhilai	-	-	-
3	Disease prediction based on various pattern recognition using Neural Networks	30.5 Lakhs	SERB And EEQ/2019/000132	-	17.0 Lakhs	-

### Research Student Project (1 New Sanctioned)

- A project titled "Masked face detection" under "Student innovation program" by ARTPARK team of IISC Bangalore was granted to Mr. Vivek Dala.

#### SERB-VIGYAN:

- Dr. M. Srinivas received a grant to conduct online skill development program from SERB under Advance for Accelerate Vigyan track.

### Patents (Filed, Published, Granted and Licensed)

#### a) Filed:

- **Dr. U. S. N. Raju** and Team "Journal Number-46/2020, Journal Date-13/11/2020- IPO", An Electronic-Filling of Deposit and Withdrawal Form (E-FDWF) Device for Visually Impaired and Illiterate People in Banks, 2020 (Filed). IPO.
- **Dr. U. S. N. Raju** and Team, "No. 202141020520", A variational auto-encoder convolutional neural network (VAE-CNN) model to identify the prevalence of diabetic retinopathy disease, 2021 (Filed). IPO.

#### b) Published: Nil

#### c) Granted:

- **Dr. Kadambari** and Lavanya Madhuri, "Acceleration of incremental learning and decremental unlearning of Support vector machines" is granted to, faculty CSE along with her PhD student in April 2021 (Granted). Australia PTO.

#### d) Licensed: Nil

### Book Chapters

- D. Himaja, and T. Maruthi Padmaja, and **P. R. Krishna**. "A Survey of Class Imbalance Problem on Evolving Data Stream." In Data Preprocessing, Active Learning, and Cost Perceptive Approaches for Resolving Data Imbalance. edited by Rana, Dipti P., and Rupa G. Mehta, 23-41. Hershey, PA: IGI Global,

2021. <http://doi:10.4018/978-1-7998-7371-6.ch002>.

- K. Chaitanya, **DVLN Somayajulu, P. R. Krishna**, Gender based Classification on e-Commerce Big Data, In: Big Data Analytics, IET Handbooks, 2021.
- Paleti Lakshmikanth, J V R Murthy, **P. R. Krishna**, On Recommender Systems with Big Data, In: Big Data Analytics, IET Handbooks, 2021.
- Sai Ganesh, Chnni Dheeraj, **R. Padmavathy**, A Deep Learning Framework to Preserve Privacy in Federated (Collaborative) Learning, Artificial Intelligence for Cyber Security: Methods, Issues and Possible Horizons or Opportunities, Studies in Computational Intelligence, Vol972, Springer, 2021.
- Peeyush joshi and **Sushil Kumar**, Single image reflection removal using deep learning, Internet of Multimedia Things (BOOK Chapter), 2021.

### Conferences, workshops, FDPs, Webinars organized

Faculty members from the Department of CSE, in association with Electronics and ICT Academy, NIT Warangal organised a total number of **14** FDPs. Also, a total **26** events have been organized in association with the Centre for Continuing Education, NIT Warangal. The details are given below:

E&ICT:

**Prof. R. B. V. Subramaanyam**, organised Data Science for All - Summer Course 2020, Dept. of CSE, NIT Warangal, 27th July, 2020, 8th August, 2020, 62

**Dr. R. Padmavathy**, Dept. of CSE, NIT Warangal & Dr. P. Sreenu, Dept. of CSE, Vishnu Institute of Technology (Autonomous), Vishnupur, Bhimavaram, organised Security in Distributed Machine Learning, 18th August, 2020, 28th August, 2020, 50

**Dr. Rashmi Ranjan Rout & Dr. Sanjaya Kumar Panda**, Dept. of CSE, NIT Warangal, organised Cloud and Fog Computing Platforms for Internet Of Things Applications, 16th December, 2020, 23rd December, 2020, 58

**Dr. M. Srinivas**, Dept. of CSE, NIT Warangal & Dr. M. Kavitha, Dept. of CSE, Vel Tech Rangarajan Dr. Sagunthala R & D Institute of



Science and Technology, Chennai, organised Data Science, 2nd January, 2021,11th January, 2021,62

**Dr. R. Padmavathy**, Dept. of CSE, NIT Warangal & Dr. N. R. Rajalakshmi, Dept. of CSE, Vel Tech Rangarajan Dr.Sagunthala R & D Institute of Science and Technology, Chennai, organised Cyber Security, 2nd January, 2021,11th January, 2021,57

**Dr. Sanjaya Kumar Panda**, Dept. of CSE, NIT Warangal, organised Python Boot Camp, 22nd February, 2021,5th March, 2021,22

**Dr. Sanjaya Kumar Panda & Dr. Manjubala Bisi**, Dept. of CSE, NIT Warangal, organised Optimization Techniques for Engineering Applications - Online Mode, 7th April, 2021,15th April, 2021,71

**Prof. R. B. V. Subramaanyam**, Dept. of CSE, NIT Warangal, organised Data Science For All Spring Course 2021 - Online Mode, 12th April, 2021,23rd April, 2021,36

**Prof. R. B. V. Subramaanyam**, Dept. of CSE, NIT Warangal & Dr. C. Chandrasekhar, Dept. of ECE, Sri Venkateswara Engineering College, Tirupati, organised Artificial Intelligence and Deep Learning, 4th May, 2021,13th May, 2021,53

**Dr. M.Sandhya & Dr. Balaprakasa Rao Killi**, Dept. of CSE, NIT Warangal, organised Data Science and its Applications with Python - Online Mode, 10th May, 2021,19th May, 2021,58

**Dr. M. Srinivas**, Dept. of CSE, NIT Warangal & Dr. V. Muthulakshmi, Dept. of IT, St. Joseph's College of Engineering, Chennai, organised Data Science - Online Mode, 15th May, 2021,24th May, 2021,53

**Dr. Manjubala Bisi**, Dept. of CSE, NIT Warangal & Dr. N. Gayatri, Dept. of CSE, Kakatiya Institute of Technology & Science Warangal, organised Machine Learning for IoT Applications - Online Mode, 7th June, 2021,15th June, 2021,52

**Dr. Venkateswara Rao Kagita & Dr. Balaprakasa Rao Killi**, Dept. of CSE, NIT Warangal, organised Machine Learning and Deep Learning with Python - Online Mode, 21st June, 2021,30th June, 2021,66

**Dr. M. Srinivas**, Dept. of CSE, NIT Warangal & Mr. K. Srinivasa Charkravarthy, Dept. of CSE, Vasavi College of Engineering (Autonomous), Hyderabad, organised Deep Learning and AI Applications - Online Mode, 21st June, 2021,30th June, 2021,69

#### CCE:

**Dr.Raju Bhukya**,CSE, organised Internet of things for Intelligent Systems, 20 - 24 July, 2020,82.

**Dr.Sushil Kumar**,CSE, organised Big Image data processing using deep learning techniques, 27 - 31 July, 2020,108,Dr.U.S.N.Raju

**Dr. Raju Bhukya**, CSE, organised Internet of Things and Machine Learning, 24 - 28 August, 2020,55.

**Dr. M Srinivas**, CSE, organised Machine Learning Methods in Real Time Applications 24 - 28 August, 2020,70.

**Dr.M.Sandhya**, CSE, Dr. P. Shyam, Biotechnology, organised Current trends in Data Analytics through hands on Experience August 31 to September 4,2020,106.

Dr. B. K. N. Srinivasarao, ECE, **Dr. E. Suresh Babu**, CSE, organised Machine learning for IoT Applications 7 - 11 September, 2020,59.

**Dr. K.Venkateshwar Rao, Dr. Balaprakasa Rao Killi**, CSE organised Deep learning Applications,14 - 18 September, 2020,70.

**Dr. Raju Bhukya**, CSE, Prof. Gautam D.Makwana, EC, organised Internet of Things with Machine Learning/Artificial Intelligent 14 - 18 September 2020,180.

**Dr. Manjubala Bisi Dr. Sanjaya Kumar Panda**,CSE, organised Soft Computing Techniques for Emerging Applications 05 - 09 october 2020,96.

**Dr. Raju Bhukya** CSE, organised Internet of things and Machine Learning,26 - 30 October 2020,50.

**Dr. Raju Bhukya**, CSE, organised Machine Learning for Intelligent Systems 01 - 05 December, 2020,60.

**Dr. Venkateswara Rao Kagita Dr. M. Sandhya**,CSE, organised Machine Learning for Data Science using Python 14 - 23 December, 2020,70.

**Dr. Ramalingaswamy Cheruku Dr. Ilaiah Kavati**,CSE organised Machine Learning Models for Disease Diagnosis: A Practical Approach 20 - 24 December, 2020,51.

**Dr. Raju Bhukya** Dr. Prabhakar M,CSE, NITW. School of CSE, REVA University - Bangalore organised Internet of Things and its Applications 21 - 25 December, 2020,55.

**Dr. Raju Bhukya**, CSE, organised Next Generation Systems - Machine learning &

Deep Learning Applications 18 - 22 January, 2021,45.

**Dr. M. Sandhya** Dr. Y. Sreenivasa Rao, CSE & Mathematics, organised Online Continuing Education Program on "Data Analytics with Python" 8 - 12 Feb, 2021,80.

**Dr. Venkateswara Rao Kagita Dr. M. Sandhya**, CSE, organised Machine Learning for Data Science using Python 1 - 10 March, 2021,67.

**Dr. Sujit Das Dr. M. Srinivas**, CSE organised Machine Learning and Optimization for Uncertain Decision Making 5 - 9 March, 2021,53.

**Dr. Raju Bhukya**, CSE, organised Research Scope in Artificial Intelligence of Things 08 - 12 Mar, 2021,26.

**Dr. Raju Bhukya**, CSE, organised Machine Learning & Deep Learning, 29 Mar - 2 Apr 2021,65.

**Dr. Venkateswara Rao Kagita Dr. Balaprakasa Rao Killi**, CSE organised Machine Learning with Python 12 - 16 April, 2021,69.

**Dr. Earnest Paul Ijjina**, CSE, organised Deep Learning and its Applications 26 - 30 April, 2021,55.

**Dr. Raju Bhukya**, CSE, organised Machine Learning & Cognitive Computing 10 -14 May, 2021,68.

K. Shivashankar HOD, Civil CSE, ECE, EEE, Kasireddy Narayanreddy College of Engineering & Research, organised AI & ML, 26 - 30 April, 2021,74.

**Dr. Raju Bhukya**, CSE, organised Artificial Intelligence & Machine Learning 24 - 28 May, 2021,82.

**Dr. Balaprakasa Rao Killi Dr. Earnest Paul Ijjina Dr. Venkateswara Rao Kagita**, CSE organised Python for Scientific Computing 7 - 11 June, 2021,88

#### **Department Sponsored:**

**Dr. Sangharatna Godbole** organised a national level workshop 13th Recent Trends in Software Testing (RTST-2020) in Dept. of CSE, NIT Warangal.

#### **Guest Talks/webinars delivered**

**Dr. Sushil Kumar**, Metaheuristics for Image Segmentation, St. Martin's Engineering

College, Dhulapally, Secunderabad, T.S, India, 21/06/2021

**Dr. Sushil Kumar**, Metaheuristics for Image Segmentation, St. Martin's Engineering College, Dhulapally, Secunderabad, T.S, India, 22/05/2021

**Dr. Sushil Kumar**, Metaheuristics for Image Segmentation, St. Martin's Engineering College, Dhulapally, Secunderabad, T.S, India, 26/05/2021

**Dr. Sushil Kumar**, Applications of Metaheuristics in Machine Learning and Computer Vision, Big Image Data Processing using Deep Learning Techniques, NIT Warangal, 30/07/2020

**Dr. Sushil Kumar**, Applications of Metaheuristics, E&ICT NIT Warangal, Jan-2021

**P. Venkata Subba Reddy**, NP-Completeness of Some Domination Problems, Dayanand Sagar University, Bengaluru, 26 February 2021

**P. Venkata Subba Reddy**, Data Structures : Overview, KSRM College of Engineering, Kadapa, 19 February 2021

**P. Venkata Subba Reddy**, Graph Theory and Algorithms : Current Research Trends, KITS Warangal, 29 July 2020

**P. Venkata Subba Reddy**, Recurrence Relations and Analysis of Algorithms, Sri Kanyaka Parameswari Arts and Science College for Women, Chennai, 7-10-2020

**P. Venkata Subba Reddy**, Asymptotic Analysis of Algorithms, Coimbatore Institute of Technology, Coimbatore, 8 July 2020

**Dr. Sujit Das**, Optimization Techniques and its real life applications, FDP on Data Science organized by E&ICT Academy, NIT Warangal and St. Joseph's College of Engineering, Chennai, May 23, 2021

**Dr. Sujit Das**, Application of Data Science for Industry 4.0, Workshop on Industrial Mathematics with Data Science for Industry 4.0 organized by SRM Institute of Science and Technology, Chennai, 04-30-2021

**Dr Sujit Das**, Introductions to Fuzzy logic, FDP on Optimization Techniques for Engineering Applications organized by E&ICT Academy, NIT Warangal, April 12, 2021

**Dr Sujit Das**, Application of Fuzzy logic, FDP on Optimization Techniques for Engineering Applications organized by E&ICT Academy, NIT Warangal, April 14, 2021

**Dr Sujit Das**, Application of Optimization Techniques, FDP on Machine learning and Optimization for uncertain decision making organized by CCE, NIT Warangal, March 9, 2021

**Dr Sujit Das**, Evolutionary Computation and Applications, FDP on Data Science organized by E&ICT Academy, NIT Warangal and Veltech University, Chennai, January 9, 2021

**Dr Sujit Das**, Overview of fuzzy logic, FDP on Artificial intelligence applications on software engineering, E & ICT Academy, NIT Warangal, July 9, 2021

**Dr Sujit Das**, Uncertain decision making using fuzzy sets and its extensions, STTP organized by MAKAUT, West Bengal on Tools and Techniques for Machine Learning and its Applications, July 6, 2021

**Dr. Sangharatna Godbole**, Protecting Software Vulnerabilities from Hackers Using Fuzzing ,TEQIP-III Sponsored One Week National Workshop on Offensive and Defensive Aspects of Cyber Security (NWODACS-2020) Parala Maharaja Engineering College(Govt.), Berhampur, India, 16/12/2020

**Dr. Sangharatna Godbole**, Software Testing Methodologies for Medical Instruments, COMPUTER SOCIETY OF INDIA (CSI) SPONSORED ONE WEEK ONLINE WORKSHOP ON INTERNET OF MEDICAL THINGS: CHALLENGES AND SOLUTIONS, 22/08/2020

**Dr. Sangharatna Godbole**, Graphics Algorithms for Drawing Circle in Any Quadrant, G. H. Raison Institute of Engineering and Technology, Nagpur, India, 17/10/2020

**Dr. Sangharatna Godbole**, Graphs Terminologies and Traversals, G. H. Raison Institute of Engineering and Technology, Nagpur, India, 20/10/2020

**Dr. Sangharatna Godbole**, Verifying Reactive Systems via Symbolic Execution with Incremental Deepening, 13th National Workshop on Recent Trends in Software Testing (RTST-2020), Dept. of CSE, NIT Warangal, 22/12/2020

**Dr.R.Padmavathy**, Elliptic curve and Lattice based public key cryptography for Blockchain technology, Workshop on Recent Trends in Information Security and Blockchain Technology (ISBT-21), NIT Hamirpur, 29/04/2021

FDP on Quantum Computing, ACE Engineering college,

Dr. Venkateswara Rao Kagita, Data Science and future technology, BITS, Warangal, 08/10/2020

**Dr. Venkateswara Rao Kagita**, Introduction to Deep Learning, Gudlavalleru Engineering College, 30/12/2020

**Dr. Venkateswara Rao Kagita**, Deep Learning, KSRM College of Engineering, Kadapa, 25/01/2021

**Dr. Venkateswara Rao Kagita**, Regression Analysis, Vardamana College of Engineering, Hyderabad, 16/06/2021

**Dr. Venkateswara Rao Kagita**, Regression Analysis and Applications, IIIT Dharwad, 18/05/2021

**Dr. Venkateswara Rao Kagita**, Data Science and applications, SIET, 15/12/2020

**Dr. Venkateswara Rao Kagita**, Hands on Session Regression Analysis, JNTUH, 20/11/2020

**Dr. Venkateswara Rao Kagita**, Python Data Structures, Bhilai Institute of Technology, Durg, 26, 27/05/2021

**Dr Sujit Das**, Applications of AI and Data Science, FDP on AI & Data Science: The Future Of Tomorrow organized by Rajiv Gandhi

Institute of Technology, Mumbai, August 6, 2021

**Dr Sujit Das**, Optimization Techniques and Applications ,Bapatla Engineering College, Bapatla, August 19, 2021

**Dr Sujit Das**, Evolutionary computation and applications ,Rajarambapu Institute of Technology, Maharashtra, August 30, 2021

**Dr Earnest Paul Ijjina**, Auto Encoders and Computer Vision Applications, Vasavi College of Engineering, Hyderabad, June 29 2021

**Dr Earnest Paul Ijjina**, Auto Encoders and real time Applications, Malla Reddy Engineering College, Hyderabad, July 7 2021

**Dr Earnest Paul Ijjina**, Human Action Recognition in Video using Deep Learning, Potti Sriramulu Chalavadi Mallikarjuna Rao College of Engineering and Technology, July 8 2021

**Dr Earnest Paul Ijjina**, Recent Trends in Artificial Intelligence and Machine Learning and its Applications, Theema College of Engg., Mumbai, July 9 2021

**Dr Earnest Paul Ijjina**, Auto Encoders and Applications, University College of Engg Kakinada (A), JNTU Kakinada, September 30 2021

**Dr Earnest Paul Ijjina**, Computer Vision Applications, Maulana Azad National Urdu University, Hyderabad, October 30 2021

**Dr M. Srinivas**, OER, Content Development, MOOCs and MOODLE, Commissionerate of Collegiate Education, Government of Andhra Pradesh, 7/8/2020

**Dr M. Srinivas**, MOOCs & e-content Development, UGC-Human Resource Development Centre (HRDC), Guru Nanak Dev University, Amritsar, 5/8/2020

**Dr M. Srinivas**, Machine Learning in Real Time Applications, NIT Warangal, 25/8/2020

**Dr M. Srinivas**, Deep Learning and Applications", NIT Warangal, 16/9/2020

**Dr M. Srinivas**, ML in Cyber-physical Systems, NIT AP, Tadepalligudem, 22/9/2020

**Dr M. Srinivas**, Building Intelligence Applications with Deep learning using pytorch, Rajalakshmi Institute of Technology, Chennai, 5/10/2020

**Dr M. Srinivas**, Support Vector Machines, LENDI Institute of Engineering and technology, Andhra Pradesh, 4/11/2020

**Dr M. Srinivas**, Dimensionality Reduction, UGC-Human Resource Development Centre, JNTUH, 10/11/2020

**Dr M. Srinivas**, Machine Learning, Manav Rachna International Institute of Research & Studies, Faridabad, Haryana, 24/11/2020

**Dr M. Srinivas**, Machine Learning and its Applications in Image Processing, Indira Gandhi Delhi Technical University for Women, Delhi, 26/11/2020

**Dr M. Srinivas**, Introduction to Machine Learning, Jyothishmathi Institute of Technology and Science, Karimnagar, 14/12/2020

**Dr M. Srinivas**, Python Based Machine Learning Foundations to Applications, Anurag Engineering College Kodada, Telangana, 16/12/2020

**Dr M. Srinivas**, Introduction to Machine Learning, Vel Tech Rangarajan DrSagunthala R & D Institute of Science and Technology, TamilNadu, 5/1/2021

**Dr M. Srinivas**, Development & Editing of Audio material, UGC-Human Resource Development Centre (HRDC), Guru Nanak Dev University, Amritsar, 6/1/2021

**Dr M. Srinivas**, Introduction to Supervised and Unsupervised Techniques, NIT Warangal, 9/2/2021

**Dr M. Srinivas**, Artificial Intelligence, Machine Learning and Deep Learning, GIET University, Odisha, 24/2/2021

**Dr M. Srinivas**, Machine Learning and Applications, NIT Warangal, 5/3/2021

**Dr M. Srinivas**, Segmentation Methods, VJIT Hyderabad, 9/3/2021

**Dr M. Srinivas**, Unsupervised Learning and Clustering Techniques, UGC Human Resource Development Center, JNTUH CEH, Hyderabad, 16/3/2021

**Dr M. Srinivas**, Deep Learning Models, NIT Warangal, 28/4/2021

**Dr M. Srinivas**, Introduction to Machine Learning and Unsupervised Methods, LBS Institute of Technology for Women, Trivandrum, Kerala, 17/5/2021

**Dr M. Srinivas**, Introduction to Machine Learning and Supervised Methods, St. Joseph's College of Engineering, Chennai, 18/5/2021

**Dr M. Srinivas**, Deep Learning and AI Applications, Vasavi College of Engineering, Hyderabad, 23/6/2021

**Dr Sujit Das**, Data Science, AI and Soft Computing: An Introduction, SRMIST Ramapuram, 18/09/2021

**Dr Sujit Das**, Universal Human Values, Hoogly College of Engineering and Technology, 24/09/2021

**Dr Sujit Das**, Optimization Methods and Applications, MNNIT Allahabad, 30/09/2021

**Dr Sujit Das**, Optimization Methods and Applications, Jawaharlal Nehru Technological University Anantapur, 29/10/2021

**Dr Sujit Das**, Optimization Methods and Applications, Sabarmati University, Gujarat, 25/10/2021

**Dr Sujit Das**, Optimization Methods and Applications, Maulana Azad National Urdu University, Hyderabad, 30/10/2021

**Dr Sujit Das**, Optimization Methods and Applications, VR Siddhartha Engineering College, Kanuru, 23/10/2021

**Dr. Sangharatna Godbole**, Verifying Reactive Systems via Symbolic Execution with Incremental Deepening,, Software Engineering Research in India (SERI), IIT Ropar, ,2021

**Dr. Sangharatna Godbole**, A tutorial session on Tracer-X, , Tutorial, 14th

Innovations in Software Engineering Conference (ISEC),,2021

**Dr. Sangharatna Godbole**, Machine Learning for Fault Localization,, GHRIBM Jalgaon, 2021

**Dr. Sangharatna Godbole**, MEFL: A hybrid approach for Fault Localization using Mutation-Ensemble technique, , IEST Shibpur,,2021

**Dr. Sangharatna Godbole**, Software Testing Methodologies,, BIET Hyderabad,,2021

**Dr. Sangharatna Godbole**, Introduction to Software Testing, , GHRIET Nagpur,,2021

**Dr. Sangharatna Godbole**, Graph Theory,, Department of Data Science, GHRIET Nagpur,,2021

**Dr. Sangharatna Godbole**, Graph Theory,, Department of Computer Science and Engineering, GHRIET Nagpur, ,2021

**Dr. Sangharatna Godbole**, MEFL: A hybrid approach for Fault Localization using Mutation-Ensemble technique, , Artificial Intelligence Applications in Software Engineering, E&ICT academy, NIT Warangal,,2021

**Dr. Sangharatna Godbole**, Protecting Software Vulnerabilities from Hackers Using Fuzzing, Artificial Intelligence Applications in Software Engineering, , E&ICT academy, NIT Warangal,,2021

**Dr. Sangharatna Godbole**, SQL in Python, Python for scientific computing, , E&ICT academy, NIT Warangal,,2021

**Dr. Sangharatna Godbole**, Testing of Smart Contracts, AICTE Training and learning (ATAL) academy sponsored Five-day Online Faculty Development Program on Emerging Techniques and Applications in IOT,, Veer Surendra Sai University of Technology, Burla 2021,2021

**Dr. Sangharatna Godbole**, Testing of Smart Contracts ,Department of Computer Science and Engineering, GIET University, Gunupur, E & ICT FDP on Convergence of AI,

ML, and DS for Engineering Applications, 2021,2021

**Dr. Sangharatna Godbole**,MEFL: A hybrid approach for Fault Localization using Mutation-Ensemble technique, ,Department of Computer Science and Engineering, GIET University, Gunupur, E & ICT FDP on Convergence of AI, ML, and DS for Engineering Applications, 2021,2021

**Dr. Sangharatna Godbole**,MEFL: A hybrid approach for Fault Localization using Mutation-Ensemble technique, ,E & ICT FDP on AI and ML, NITW, 2021,2021

**Dr. Sangharatna Godbole**,Optimal MC/DC Test Case Generation, ,Software Engineering Research in India (SERI), IIIT Hyderabad, ,2020

**Dr. Sangharatna Godbole**,Program Analysis and Testing, ,IEEE Computer Society Student Branch Chapter IIT Kharagpur, ,2020

**Dr. Sangharatna Godbole**,Optimal MC/DC Test Case Generation,,PLV seminar, SOC, NUS Singapore, ,2020

**Dr. Sangharatna Godbole**,Program Analysis & Testing, ,St. John College of Engineering and Management, Palghar, ,2020

**Dr. Sangharatna Godbole**,Graphics Algorithms for Drawing Circle in any Quadrant along with ellipse generation, ,GHRIET Nagpur, ,2020

**Dr. Sangharatna Godbole**,Graph Terminologies and Traversals, ,GHRIET Nagpur,,2020

**Dr. Sangharatna Godbole**,Structural Design Pattern and its types, ,GHRIET Nagpur,,2020

**Dr. Sangharatna Godbole**,Protecting Software Vulnerabilities from Hackers Using Fuzzing, ,TEQIP-3 Sponsored One Week National Workshop on Offensive and Defensive Aspects of Cyber Security, PMEC,,2020

## Awards/ Recognitions/ Achievements

### Recognitions (Memberships):

**P Venkata Subba Reddy**,Academy of Discrete Mathematics and Applications (ADMA),Life Member

**Dr.Balaprakasa Rao Killi**,IEEE,Senior Member,2021-2022

**Dr Sujit Das**,IEEE,member,2020-2021

**Dr Sujit Das**,ORSI,Life Member,2019

**Dr. Sangharatna Godbole**,

IEEE,member,2020-2020

**Dr. Sangharatna**

**Godbole**,ACM,member,2020-2020

**Dr. Sangharatna**

**Godbole**,INSTICC,member,2021

**Dr.U.S.N.Raju**,IEEE,Senior Member,2021-2022

**Dr. Earnest Paul**,IEEE,Member,2021-2022

**Dr. Earnest Paul**,ACM,Member,2021-2022

**Dr. M Srinivas**,IEEE,Member,2021-2022

**Dr. M.Sandhya**,IEEE,Member,2021-2022

**Dr. Balarprakasa Rao Killi**,IEEE,Senior Member,2021-2022

## Achievements

**Dr. Sangharatna Godbole**,Developed software testing tool Tracer-X achieved 2nd Rank in RERS (Rigorous Examination of Reactive Systems (RERS))-2020, (a world level Software Testing Tool Competition co-located with ISOLA2020 Greece),2020

**Dr. Sangharatna Godbole**,Developed software testing tool Tracer-X achieved 6th Rank in TestComp-2021, 3rd Intl. Competition on Software Testing held at FASE 2021 in Luxembourg. (World level competition),2020.

**Dr. Sangharatna Godbole**,Received all three ACM badges \*\*Artifact Available, Functional, and Reusable Badges\*\* in Artefact Evaluation track at 30th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA), 2021(Core-A) for the accepted paper "Toward Optimal MC/DC Test Case Generation".,2021

## PhD Research guidance (Completed during the academic year)

- **Sudarshan Chakravarthy** (Roll No.701432), Title: "Energy Efficient Resource Management in Cloud Computing", Supervisors: Dr. Ch. Sudhakar and Prof. T. Ramesh
- **Morampudi Mahesh Kumar** (Roll No. 701634), Title: "ReSPIRE: Reliable, Secure and Privacy-preserving Iris Remote

Authentication Techniques", Supervisors: Dr. USN Raju and Dr. MVNK Prasad.

**P. Lalitha Kumari** (Roll. No. 701368), Title: "Algorithms for Mining High Utility Itemsets in Transactional Databases", Supervisor: Prof. S.G.Sanjeevi.

**L. Greeshma** (Roll. No. 716174), Title: "Design of Social Bot Detection and Trust Models for Online Social Networks", Supervisors: Dr. Rashmi Ranjan Rout and Prof. DVLN Somayajulu.

**R. Phani Bhushan** (Roll No. 701316), Title: "Some Efficient Storage Structures for Spatial Raster Data on Commodity Clusters" ,

Supervisor: Prof. D V L N. Somayajulu and Dr. S Venkataraman.

**Rayanoothala Praneetha Sree** (Roll No.716172), Title: "Some Approaches for Mining Various Patterns and Influential Trajectories from Spatio-Temporal Data", Supervisors: Dr S Ravichandra and Prof. DVLN Somayajulu.

**Jakkepalli Pavan Kumar** (Roll No. 715073), Title: "Algorithmic Aspects of Variants of Domination in Graphs", Supervisor: Dr. P. Venkata Subba Reddy

### Best student papers and other achievements

#### Best Student Research Paper Award

- **Nishant Kumar** (M.tech), Vishnu Kumar (Ph.D. Scholar), P. R. Krishna "A Visual Co-occurrence Driven Recommender System" got Best Student Research Paper Award in the IEEE Cloud Computing in Emerging Markets 2021 (IEEE CCEM 2021) conference, virtually hosted from New Jersey.

#### Participation and achievements of B.Tech. CSE Students

- Hacktoberfest-2021
- Devathon by WSDC
- Ideathon by IG (Idea got selected for incubation)
- Design-a-thon by CSEA ( 3rd place and active participation from 2nd year students)
- CASE STUDY by IG (2nd place)
- 30 days of Google Cloud (10+ students completed both the tracks and are eligible for prize)
- HACKON WITH AMAZON
  - Achievement : Top 10 National Finalist
  - Prize : Selected for Intern at Amazon
  - Team
    - 1. Mohd Sufiyan Ansari (Also got internship from DeShaw)
    - 2. Chaitanya Hardikar
    - 3. Ashiq Rahman
- VERSION BETA 2.0
  - Hackathon organised by MANIT BHOPAL
  - Achievement : Shortlisted for Top 7 teams and team got appreciation
  - Team
    - 1. Mohd Sufiyan Ansari
    - 2. Anshuman Mishra- ECE
- Azure Developer League Hackathon
  - Deekshitha Tirumala participated and qualified first phase (shortlisted in prototype phase)
- Dare2Compete Hackathon
  - Apurv Jain (Roll No.197211) Ranked 38 among 6701 participants

#### Details of students joined in higher educational institutes

- **Sujeet Kumar**, M.Tech. CSE (2019-2021), joined Ph.D. (CSE) at IIT Khargpur
- Two B.Tech. Students joined MS program @ University of Alberta and Purdue University

Please fill the table (**All student information**) for NIRF application



S. No.	Roll No.	Name of the Student	Department	Placement Details	Higher Studies (Yes/No)
1	197522	Sujeet Kumar, M.Tech. CSE	CSE		Ph.D. at IIT Kharagpur

## Department Outreach Activities

### CONFERENCES / SYMPOSIA SESSIONS CHAIRED

**Dr. sushil kumar**, ICIDC-2020, Shri Ramdeobaba College of Engineering and Management, Nagpur, 27-28 Nov-2020

**Dr. sushil kumar**, ICCIS-2021, Sharda University, Greater Noida, Uttar Pradesh, 19-20 Feb 2021

**Dr. sushil kumar**, ICCIKE-2021, Amity University Dubai, 17-18 March 2021

**Dr. Sangharatna Godbole**, International Conference on Intelligent Systems, Data Science and Computing [ICIDC-2020], CSE, RCOEM, Nagpur (INDIA), 27-28, November 2020

**Dr. Sangharatna Godbole**, PROJECTS of 10th PIC-2021 (ICDCIT-2021), KIIT Bhubaneswar, 08-01-2021

## Department Association/Students Clubs Activities

Computer Science and Engineering Association (CSEA) CSEA has been functioning over the years in the department of Computer Science & Engineering with the objectives of promoting student activities for organizing and participating in co-curricular activities by the students of the Department. All the students of CSE department are members of CSEA. The events conducted by CSEA promote Organising capabilities and communication skills of students in addition to developing the technical knowledge. Executive Body of CSEA (Computer Science and Engineering Association) for the Academic Year 2018-2019.

# DEPARTMENT OF BIOTECHNOLOGY

## Brief History of the Department, Academic Programs

The Department of Biotechnology was established in 2006 with a B.Tech in Biotechnology program. In 2009, Ph.D in Biotechnology program was started and in 2020, M.Tech in Biotechnology program was started.

The department has highly qualified and committed faculty members who are well recognized and have expertise in diversified research fields of Biotechnology.

The department aspires to be a knowledge nerve center in Biotechnology Education, Research, Entrepreneurship and Industry outreach for creating sustainable infrastructure and enhancing the quality of life. This will be achieved by generating a specialized cadre of Biotechnology by imparting quality education and training to attain International standards in teaching and research with global linkages.




## Faculty Details:

S. No.	Name of the Faculty Member and Designation	Highest Qualification	Research Interests	Photograph
1.	<b>Dr. Parcha Sreenivasa Rao</b> Associate Professor	Ph. D	Stem Cell Engineering, Metabolic Engineering, Enzyme Engineering and Downstream Processing	
2	<b>Dr.R.Satish Babu</b> Associate Professor	Ph. D	Nanobiotechnology, Bioprocess Engineering, Environmental Biotechnology, Modeling and Simulation of Bioprocesses, Metabolic Engineering, Bioinformatics	
3	<b>Dr. P Onkara Perumal</b> Associate Professor	Ph. D	Bioinformatics; Biofuels & Bioenergy	
4	<b>Dr. Korrapati Narasimhulu</b> Associate Professor <b>HOD</b>	Ph.D	Environmental Biotechnology, Modelling & Simulation of Bioprocesses, Biofuels & Bioenergy, Systems Biology	
5	<b>Dr. Amitava Bandhu</b> Assistant Professor	Ph.D	Studies on gene regulation in Mycobacteria,	

6	<b>Dr. B Rama Raju</b> Assistant Professor	Ph.D	Metabolic Engineering, Bio fuels and Biomaterials	
7	<b>Dr. V. Kohila</b> Assistant Professor	Ph.D	Protein Engineering, Computational Biology	
8	<b>Dr. Asim Bikas Das</b> Assistant Professor	Ph.D	Network system biology of large scale data; Signaling pathways in cancer	
9	<b>Dr. Urmila Saxena</b> Assistant Professor	Ph.D	Nanobiotechnology and Medical Biosensors	
10	<b>Dr. Prakash Saudagar</b> Assistant Professor	Ph.D	Molecular and Biochemical parasitology	



11	<b>Dr. P Shyam</b> Assistant Professor	Ph.D	Bioinformatics, Systems biology, Next Generation Sequencing, Molecular Modeling, Molecular Dynamics & Simulations, Drug Design and Discovery, Machine Learning, Data Science, Bigdata, High Performance Computing (HPC).	
12	<b>Dr. M Jerold</b> Assistant Professor	Ph.D	Biofuels; Biosorption; Wastewater Treatment; Bioprocessing; Adsorption; Algal Biotechnology ; Microbial Fuel Cell; Biosurfactant; Plant Tissue Culture; Biopolymer production; Organic acid production	
13	<b>Dr. P Anbumathi</b> Assistant Professor	Ph.D	Systems Biology; Mathematical Modeling and Simulation of Biological Processes; Fermentation Technology; Metabolic Engineering; Experimental Design and Analysis, History of Science, Evolution	
14	<b>Dr. D Rathnaprabha</b> Assistant Professor	Ph.D	Biotechnology, Plant Biotechnology(Various types Tissue Cultures) and Molecular biology, R-DNA.	
15	<b>Dr. Soumya Lipsa Rath</b> Assistant Professor	Ph.D	Computational Biophysics	

16	<b>Dr.Surajbhan sevda</b> Assistant Professor	Ph.D	Bioelectrochemical system, Biological Wastewater Treatment, Bioreactor Design, Fermentation Technology	
17	<b>Dr. Priya</b> Assistant Professor	Ph.D	Cell biology, epigenetics	
18	<b>Dr. Thyageshwar Chandran</b> Assistant Professor	Ph.D	Structural Biology	
19	<b>Dr. Chockalingam S</b> Assistant Professor	Ph.D	Cell Signalling and Cancer Biology	
20	<b>Dr. Ashish A Prabhu</b> Assistant Professor	Ph.D	Metabolic Engineering; Bioprocess Engineering; Biomass and Biorefinery; Therapeutic proteins/enzymes	

## Journal Publications

Saroj, P., Manasa, P., & **Narasimhulu, K.** (2021) "Assessment and evaluation of cellulase production using ragi (Eleusine coracana) husk as a substrate from thermoacidophilic *Aspergillus fumigatus* JCM 10253". *Bioprocess and Biosystems Engineering*, 44(1), 113-126. (SCI, IF = 2.419).

Saroj, P., Manasa, P., & **Narasimhulu, K.** . Optimization of xylanase production using ragi (Eleusine coracana) husk as a substrate by *Aspergillus fumigatus* JCM 10253 through response surface methodology. *Biomass Conversion and Biorefinery*, 2020, 1-11.

**Surajbhan Sevda**, Vijay Kumar Garlapati, Sunandan Naha, Mohita Sharma, Sreemoyee Ghosh Ray, T R Sreekrishnan, Pranab Goswami. Biosensing capabilities of bioelectrochemical systems towards sustainable water streams: Technological implications and future prospects. *Journal of Bioscience and Bioengineering* , 2021, 129 (6): 647 -656.

<https://doi.org/10.1016/j.jbiosc.2020.01.003>

Sunandan Naha, Chetan Joshi, B Chandrashekhar, T R Sreekrishnan, Pranab Goswami & **Surajbhan Sevda**. Bioelectrosynthesis of organic and inorganic chemicals in bioelectrochemical system. *ASCE's Journal of Hazardous, Toxic, and Radioactive Waste.* , 2020, 24(2): 03120001 (ISBN No: 21535493) DOI: 10.1061/(ASCE)HZ.2153-5515.0000491.

Bahaa A Hemdan, Gamila E El-Taweel, Pranab Goswami, Deepak Pant, **Surajbhan Sevda**. The role of biofilm in the development and dissemination of ubiquitous pathogens in

drinking water distribution systems: an overview of surveillance, outbreak and prevention. *World Journal of Microbiology and Biotechnology*, 2021. 37 (2), 1-18. <https://doi.org/10.1007/s11274-021-03008-3>

Shiv Prasad , Anoop Singh , Nicholas E. Korres , Dheeraj Rathore , **Surajbhan Sevda**, Deepak Pant. Sustainable utilization of crop residues for energy generation: A life cycle assessment (LCA) perspective. *Bioresource Technology* 2020, 303, 122964. <https://doi.org/10.1016/j.rser.2020.109977>

S Jindal, S Chockalingam, SS Ghosh, P Gopinath. Connexin and gap junctions: Perspectives from biology to nanotechnology based therapeutics. *Translational Research*. 2021, doi: 10.1016/j.trsl.2021.02.008.

Sarim Khan, Sankarakuttalam Chockalingam, Patit P Kundu, Gopinath Packirisamy. Fabrication of bimodal porous scaffold with enhanced mechanical properties using silanized sisal fibers for potential application in bone tissue engineering. *Mater. Today Commun.* 2020, 25: 101260

Sofia Maina, **Ashish A Prabhu**, Narisetty Vivek, Anestis Vlysidis, Apostolis Koutinas, Vinod Kumar, (2021). Prospects on bio-based 2, 3-butanediol and acetoin production: Recent progress and advances. *Biotechnology Advances*, 107783

Yassin Amraoui, **Ashish A Prabhu**, Vivek Narisetty, Frederic Coulon, Anuj Kumar Chandel, Nicholas Willoughby, Samuel Jacob, Apostolis Koutinas, Vinod Kumar, (2021). Enhanced 2, 3-Butanediol production by mutant *Enterobacter ludwigii* using Brewers' spent grain hydrolysate: Process optimization for a pragmatic biorefinery loom. *Chemical Engineering Journal*, 427, 130851.



Vivek Narisetty, **Ashish A Prabhu**, Khalid Al-Jaradah, Deeksha Gopaliya, Abeer H Hossain, Sunil Kumar Khare, Peter J Punt, Vinod Kumar, (2020). Microbial Itaconic acid Production from Starchy Food Waste by Newly Isolated Thermotolerant *Aspergillus terreus* Strain. *Bioresource Technology*, 125426.

Yogita Lugani, Rohit Rai, **Ashish A Prabhu**, Poonam Maan, Meenu Hans, Vinod Kumar, Sachin Kumar, Anuj K Chandel, RS Sengar, (2020), Recent advances in bioethanol production from lignocelluloses: a comprehensive review with a focus on enzyme engineering and designer biocatalysts. *Biofuel Research Journal*, 7, 267-1295.

**Ashish A Prabhu**, Ekkarin Bosakornranut, Yassin Amraoui, Deepti Agrawal, Frederic Coulon, Vivekanand Vivekanand, Vijay Kumar Thakur, Vinod Kumar, (2020). Enhanced xylitol production using non-detoxified xylose rich pre-hydrolysate from sugarcane bagasse by newly isolated *Pichia fermentans*. *Biotechnology for biofuels*, 13, 1-15

**Ashish A Prabhu**, RL Amaro, CSK Lin, F Coulon, Thakur Vk, Vinod Kumar (2020). Bioproduction of succinic acid from xylose by engineered *Yarrowia lipolytica* without pH control. *Biotechnology for biofuels*, 13, 113.

**Ashish A Prabhu**, DJ Thomas, RL Amaro, GA Leeke, AM Vaya, C Verheecke-Vaessen, F Coulon, Vinod Kumar (2020) Biovalorisation of crude glycerol and xylose into xylitol by oleaginous yeast *Yarrowia lipolytica*. *Microbial cell factory*, 19, 121.

Sumithra, V.S.P.K. Sankara Aditya Jayanthi, Hari Chandana Manne, Rashmika Gunda, **Urmila Saxena\***, **Asim Bikas Das\*** (2020) Antibody-based biosensor to detect oncogenic splicing factor Sam68 for the diagnosis of lung

cancer, *Biotechnology Letters* , 42, 2501-2509.

**Asim Bikas Das\***(2020). Small-world networks of prognostic genes associated with lung adenocarcinoma development, *Genomics* 112, 4078-4088.

R. Kowshik Aravilli, **V. Kohila\***, S. Laveen Vikram, Heuristics in role of Human Glutathione S-transferase Mu 1 as Nitric Oxide Carrier and its Engineered Variants for Enhanced Activity, *Current Pharmaceutical Biotechnology*, **2021**, 22(15), 2071-2084.

Haarika Raghavapudi, Pankaj Singroul, **V. Kohila\***, Brain tumour: causes, symptoms, diagnosis and radiotherapy treatment, *Current Medical Imaging*, **2021**, 17(8), 931-942.

R. Kowshik Aravilli, S. Laveen Vikram, **V. Kohila\***, The functional impact of alternative splicing and single nucleotide polymorphisms in rheumatoid arthritis. *Current Pharmaceutical Biotechnology*, **2021**, 22(8), 1014-1029.

Deepti Diwan, Lei Cheng, Zeba Usmani, Minaxi Sharma, Nicola Holden, Nicholas Willoughby, Neelam Sangwan, **Rama Raju Baadhe**, Chenchen Liu, Vijai Kumar Gupta,(2021) Microbial cancer therapeutics: A promising approach, **Seminars in Cancer Biology**,,ISSN 1044-579X,<https://doi.org/10.1016/j.semcan.2021.05.003>. **IF 15.707**

Velidandi, A., Pabbathi, N. P. P., & **\*Baadhe, R. R.** (2021). Study of parameters affecting the degradation of rhodamine-B and methyl orange dyes by *Annona muricata* leaf extract synthesized nanoparticles as well as their recyclability. **Journal of Molecular Structure**, 1236, 130287. **IF 3.196**

Velidandi, A., Pabbathi, N. P. P., Dahariya, S., & \*Baadhe, R. R. (2021). Green synthesis of novel Ag-Cu and Ag-Znbimetallic nanoparticles and their in vitro biological, ecotoxicity and catalytic studies. **Nano-Structures & Nano-Objects**, 26, 100687.

**CiteScore: 9.1**

Pabbathi, N. P. P., Velidandi, A., Gandam, P. K., Koringa, P., Parcha, S. R., & \*Baadhe, R. R. (2021). Novel buffalo rumen metagenome derived acidic cellulase Cel-3.1 cloning, characterization, and its application in saccharifying rice straw and corncob biomass.

**International Journal of Biological Macromolecules**, 170, 239. **IF 6.953**

Pabbathi, N. P. P., Velidandi, A., Tavarana, T., Gupta, S., Raj, R. S., Gandam, P. K., & \*Baadhe, R. R. (2021) Role of metagenomics in prospecting novel endoglucanases, accentuating functional metagenomics approach in second-generation biofuel production: a review. **Biomass Conversion and Biorefinery**, 1-28. **IF 4.987**

Pabbathi, N. P. P., Mootapally, C., Velidandi, A., Dave, K., Nathani, N. M., & \*Baadhe, R. R. (2020). Living soil of fifty-year-old saw mill: Dawn bioresource with differential hydrolytic potentials. **Ecological Genetics and Genomics**, 16, 100061. CiteScore: 2.3

Velidandi, A., Pabbathi, N. P. P., Dahariya, S., & \*Baadhe, R. R. (2020). Catalytic and ecotoxicity investigations of bio-fabricated monometallic nanoparticles along with their anti-bacterial, anti-inflammatory, anti-diabetic, anti-oxidative and anti-cancer potentials. **Colloid and Interface Science Communications**, 38, 100302. **IF 4.914**

**Velidandi, A., Dahariya, S., Pabbathi, N. P. P., Kalivarathan, D., & Baadhe, R. R. (2020).** A review on synthesis, applications,

toxicity, risk assessment and limitations of plant extracts synthesized silver nanoparticles. *NanoWorld J*, 6(3), 35-60.

Parameshwara Chary Jilloju, **Perugu Shyam**, Chedupaka Raju & Rajeswar Rao Vedula. An Efficient One-Pot Synthesis of-Phenyl-3-(1H-Pyrazol-1-yl)-[1,2,4] Triazolo[3,4-b] [1,3,4] Thiadiazole Derivatives and Their Antimicrobial Evaluation and Molecular Docking Studies. *Polycyclic Aromatic Compounds*, 2021, 1-15. doi.org/10.1080/10406638.2021.1886127.

Samuel Joshua Pragasam Sampath, Swetha Birineni, **Shyam Perugu**, Nagasuryaprasad Kotikalapudi, Vijayalakshmi Venkatesan. Therapeutic efficacy of 6-Gingerol and 6-Shogaol in promoting browning of white adipocytes vis-à-vis enhanced thermogenesis portrayed in high fat milieu. *Food Bioscience*, 2021, 42,101211.

Parameshwara Chary Jilloju, **Perugu Shyam**, Ananthula Sanjeev, Rajeswar Rao Vedula. Four-component, one-pot synthesis of (E)- N-benzylidene-3-(benzylthio) 5-(3,5-dimethyl-1 H -pyrazol-1-yl)-4 H -1,2,4-triazol-4- amines and their DNA binding and molecular docking studies. *Journal of Molecular Structure*, 1225 (2020) 129140.

Razak Hussain, Yusuf Akhter, Mandava Venkata Basaveswara Rao, **Perugu Shyam**, Sailu Yellaboina. Drug Re-purposing from SARS-CoV Led the Identification of Potential Candidate Drug Target and Alternate Drug Molecules Against SARSCoV- 2. *Letters in Drug Design & Discovery*, 2020, 17, 1325-1327.

D. Tripathy\*, A. K. Pal, **S. L. Rath**, G. S. Hanan, B. B. Panda, D. K. Chand. Synthesis, characterization and molecular docking study of Nitro-4'-(2-pyridyl)-2,2':6',2''-terpyridyl

palladium(II) nitrate. *Inorg. Chem. Commun.* 126, 108494, 2021 (I.F: 2.495)

H. G. Toor, D.I. Banerjee\*, **S. L. Rath**, S. A. Darji. Computational drug re-purposing targeting the Spike glycoprotein of SARS-CoV-2 as an effective strategy to neutralize COVID-19. *Eur. J. Pharmacol.* 890, 173720, 2021 (I.F :3.170)

**S. L. Rath\***, Kishant Kumar. Investigation of the effect of temperature on the structure of SARS-Cov-2 Spike Protein by Molecular Dynamics Simulations. *Front Mol Biosci* 7, 297, Sept 22, 2020 : DOI: 10.3389/fmolb.2020.583523 (I. F : 4.62)

Vineeth Reddy Karnati, Teja Munaga, Kalyan Kumar Gonavaram, **Amitava Bandhu**. Study on Strength and Leaching Behavior of Biogeochemical Cemented Sand. *Geomicrobiology Journal*, Volume 37, Year 2020, Pages 670 - 681

Dipanwita Maity, Rajasekhara Reddy Katreddy, **Amitava Bandhu**. Molecular Cloning, Purification and Characterization of Mce1R of *Mycobacterium tuberculosis*. *Molecular Biotechnology*, Volume 63, Year 2021, Pages 200-220.

### Conference publications

Bhavani, G.S., & Anbumathi, P. (2021). Systems Modelling and Analysis of TGF- $\beta$  induced Epithelial to Mesenchymal Transition in cancer Metastasis. *AJIR Abstracts*, 8. DOI <https://doi.org/10.21467/abstracts.109>

G Sai Bhavani, Anbumathi P. 2021. Exploring the Contributions of Women Scientists in Field of Systems Biology. International Conference on Women Empowerment in Science and Technology

held on 8<sup>th</sup> – 10<sup>th</sup> March 2021, Organised by Women Cell, NIT Warangal, India

G Sai Bhavani, Anbumathi P. 2021. Exploring the Contributions of Women Scientists in Field of Synthetic Biology. International Conference on Women Empowerment in Science and Technology held on 8<sup>th</sup> – 10<sup>th</sup> March 2021, Organised by Women Cell, NIT Warangal, India

G Sai Bhavani, Anbumathi P. 2021. A Survey based analysis of Women's Health, Wellbeing: Issues and Concerns. International Conference on Women Empowerment in Science and Technology held on 8<sup>th</sup> – 10<sup>th</sup> March 2021, Organised by Women Cell, NIT Warangal, India

G. Sai Bhavani, Shervin Sugumaran, Anbumathi P. 2019. Quantification of Oxidative stress regulation of fission yeast *S. pombe*. IITM-EBI modelling workshop, IIT Madras in collaboration with EMBL, 2-5th December, 2019, Chennai, Tamil Nādu, India

G Sai Bhavani, Anbumathi P. 2019. Working Women's Health, Wellbeing: A Survey Based Study on Issues and Concerns. Role of Women in Technical Education (RWTE-2019) held on 8<sup>th</sup> – 9<sup>th</sup> March 2019, Organised as a part of Diamond Jubilee celebrations under TEQIP-III at NIT Warangal, India

Rathnaprabha.D. 2019. Health and Nutrition Tips for women(in30's)-towards Achieving work efficiency.Role of Women in Technical Education(RWTE-2019) held on 8th and 9th March 2019, Organised as a part of Diamond Jubilee Celebrations under TEQIP-III at NIT Warangal,India

A Srividya, Rathnaprabha D. Women empowerment towards Plant molecular

sciences. International Conference on Women Empowerment in Science and Technology held on 8<sup>th</sup> – 10<sup>th</sup> March 2021, Organised by Women Cell, NIT Warangal, India

Teena Chandna, Susmita Gorntala, RSatish Babu and Ashish A Prabhu. Recombinant production of L- asparaginase: An Indispensable anti- cancerous agent. International Conference on Recent innovations in chemical and biological engineering (RICBE-2k21) jointly organized by Department of Chemical engineering and Biosciences, RGUKT - NUZVID, A.P., India, in association with IChE-ARC during 16th - 18th September, 2021.

Susmita Gorntala, Teena Chandna, R Satish Babu and Ashish A Prabhu. Process development of serratiopeptidase: Effective therapeutic agent.. International Conference on Recent innovations in chemical and biological engineering (RICBE-2k21) jointly organized by Department of Chemical engineering and Biosciences, RGUKT - NUZVID, A.P., India, in association with IChE-ARC during 16th - 18th September, 2021.

Maddirala Shivani, Varsha K M, Motru Vineela, **Surajbhan Seveda**. High strength wastewater treatment accompanied by power generation and resource recovery using bioelectrochemical systems. Fifth International Online Conference on Reuse and Recycling of Materials (Polymers, Wood, Paper, Leather, Glass, Metals, Ceramics, Semi Conductors, Water) and their products (ICRM – 2020). Organized by Mahatma Gandhi University, Kottayam, Kerala, India and

Wroclaw University of Technology, Poland. 11<sup>th</sup> -13<sup>th</sup> December 2020.

Varsha K M, Maddirala Shivani, Motru Vineela, **Surajbhan Seveda**. Metal Recovery Using Bioelectrochemical System. Two-Day Online National Conference on Biological, Biochemical, Biomedical, Bioenergy and Environmental Biotechnology (NCB4EBT-2021) Organized by Department of Biotechnology National Institute of Technology Warangal, January 29-30, 2021.

Pradeep Kumar, **V. Kohila\***. *In silico* designing and characterization of the novel fusion protein bCDF186W-hPFN1 as a therapeutic application for rheumatoid arthritis, International webinar on Advances in Genomics & Gene Technology, [Oral Presentation], 24-26 March 2021, IUCGGT, University of Kerala.

R. Kowshik Aravilli, **V. Kohila\***. Histone mimicry: a viral strategy of host immune evasion, International webinar on Advances in Genomics & Gene Technology, [Poster Presentation], 24-26 March 2021, IUCGGT, University of Kerala.

**V. Kohila\***. Genome editing tools: a new era in revolutionized genomics, International webinar on Advances in Genomics & Gene Technology, [Poster Presentation], 24-26 March 2021, IUCGGT, University of Kerala.

**V. Kohila\***. Integration of science and technology : Innovations in Biotechnology, Lifesciences and Governance, International Conference on women empowerment in science and technology (ICWEST 2021), [Oral Presentation], 8-10 March 2021, NIT Warangal.

Momina shanaz, **Shyam Perugu** "Insilco analysis of biologically active plant products against cancer causing agents" in "NCB4EBT-

2021" Two-Day Online National Conference on Biological, Biochemical, Biomedical, Bioenergy, and Environmental Biotechnology (NCB4EBT 2021) 29-01-2021 to 30-01-2021, online mode conducted by NIT Warangal, the Department of Biotechnology.

Momina shanaz, **Shyam Perugu**. Women contribution towards Bioinformatics. International Conference Women Empowerment in Science and Technology (ICWEST 2021), 8th - 10th March 2021, Organised by Women Cell, NIT Warangal, India.

**Dr Perugu Shyam** delivered a lecture on Computer applications for image analysis and interpretation in International webinar on Deep learning for detection and management of plant diseases held on 8th March, 2021, organized by Jagan nath University, Bahadurgarh, India. IFSDAA, AASF, SSARM.

**Dr Perugu Shyam**, Biofortification and its importance in India. A 5 Day Online FDP on "Advances in Biological, Biochemical, Biomedical and Bioenergy (AB)" (09-11-2020 to 13-11-2020), Department of Biotechnology, National Institute of Technology Warangal (09/11/2020).

**Dr Perugu Shyam**, (**Lecture-06:** Modernization of Food Biotechnology 26/8/2020, **Lecture-11:** The role of additives in Food Biotechnology 27/08/2020, **Lecture-14:** Bioreactors in Tissue Engineering 28/8/2020), ONLINE FACULTY DEVELOPMENT PROGRAMME ON "Advances and Applications of Bioprocess Engineering Techniques" (24-08-2020 to 28-08-2020), Department of Biotechnology, National Institute of Technology Warangal.

**Dr Perugu Shyam**, *InSilico* drug design and virtual screening in **UGC sponsored**

**National Seminar on Modern trends in Drug Development** held during 2nd - 3rd March, 2021, organized by University College of Pharmacy, Acharya Nagarjuna University, Andhra Pradesh.

**Dr Perugu Shyam**, Biofortification and its importance in India in FDP on Advances in Biological, Biochemical, Biomedical and Bioenergy on 10th November, 2020, organized by NIT Warangal.

**Dr Perugu Shyam**, Bioinformatics approaches in Genomics and Proteomics in **Expert lecture webinar** on 10th December, 2020, organized by NITTE, Bangalore.

**Dr Perugu Shyam**, Role of Bioinformatics in Identification of Criminals in **Expert lecture webinar** on 23rd September, 2020, organized by JNTUH, Hyderabad.

**Dr Perugu Shyam**, Art of Python Programming (with hands on) in FDP on Current trends in Data Analytics through Hands-on Experience during 31st July, 2020 to 1st August, 2020, organized by NIT Warangal.

**Dr Perugu Shyam**, Introduction to data analytics, Data Interpretation, importing and exporting data, Sampling methods in FDP on Current trends in Data Analytics through Hands-on Experience during 31st July, 2020 to 1st August, 2020, organized by NIT Warangal.

### **Funded Research Projects**

**Rathnaprabha.D** DST-SERB(EEQ) was sanctioned in the year January 2019 for three years on "Micropropagation and enhancement of potent anticancer drug(camptothecin) using elicitors and hairy

root cultures in *Nothapodytes foetida* (wright slumer)- A threatened medicinal plant”

**Surajbhan Sevda**, NITW RSM Project\_P1128 (April 2020 to March 2022). Engineered microorganism for bioelectrochemical systems for water remediation, i.e. perchlorate and nitrate reduction (Ongoing).

**Dr. V. Kohila (PI)**, Cytotoxic and tumor suppressor role of a novel fusion suicide gene bCDF186W-hPFN1 on rheumatoid arthritis, DST-SERB, EEQ/2017/000466, 2018-2021, Rs. 39.21 lakhs (Ongoing).

**Prakash Saudagar** received a project from DST-SERB(EEQ/2018/000484) sanctioned on 20<sup>th</sup> February, 2019 for a period of 3 years on “Characterization and validation of tyrosine aminotransferase from *Leishmania donovani* as a potential drug target.” (Ongoing).

#### Sessions Chaired:

- Chaired the session (**Dr. Perugu Shyam**) on Intelligent Brain Computer Interface in **12th International Conference on Intelligent Human Computer Interaction-2020** organized by, Exco-Daegu, South Korea on 26/11/2020.
- Two-Day Online National Conference on Biological, Biochemical, Biomedical, Bioenergy, and Environmental Biotechnology (NCB4EBT-2021). on 29/01/2021(Oral Presentation Session – 3 Plant, Animal Environmental and Food Biotechnology (Chairpersons: **Dr. Perugu Shyam** and **Dr. Thyageshwar Chandran**, NIT Warangal)
- Panel Discussion(**Dr. Perugu Shyam**) in National Science Teachers Congress, IISF 2020 organized by DST, Government of India on 23/12/2020
- Two-Day Online National Conference on Biological, Biochemical, Biomedical, Bioenergy, and Environmental Biotechnology

(NCB4EBT-2021) on 30/01/2021 (Oral Presentation Session – 4, Biotechnology-1, Chairpersons: **Dr. V. Kohila** and Dr. Thyageshwar Chandran).

- Three-Day Online International Conference on Women Empowerment in Science and Technology (ICWEST-2021) on 08/03/2021 (Oral Presentation Session – 1, Women in STEM, Chair: Dr. C. Vanitha and Co-chair: **Dr. V. Kohila**).
- Three-Day Online International Conference on Women Empowerment in Science and Technology (ICWEST-2021) on 09/03/2021 (Oral Presentation Session – 4, Women in STEM, Chair: Dr. P. Anbumathi and Co-chair: **Dr. V. Kohila**).

#### Books

**M. Jerold**, A. Santhiagu and V. Sivasubramanian, **Bioprocess Engineering for Bioremediation: Valorization and Management Techniques**, Springer Nature, Switzerland, 2020, ISBN No: 978-3-030-57911-1 (First Edition).

**M. Jerold**, A. Santhiagu, Rajulapati Sathish Babu and Narasimhulu Korapatti, **Sustainable Bioprocessing for a Clean and Green Environment: Concepts and Applications**, CRC Press, Boca Raton, United States (Taylor and Francis Group), 2021, ISBN No: 978-0367459086 (First Edition). Birru Bhaskar, Parcha Sreenivasa Rao, Naresh Kasoju Vasagiri Nagarjuna, Rama Raju Baadhe. **Biomaterials in Tissue Engineering and Regenerative Medicine: From Basic Concepts to State of the Art Approaches** ISBN: 978-981-16-0002-9, 2020 **Springer Nature Switzerland AG**.

#### Book Chapters

Archana Prabahar, Anbumathi Palanisamy. A protocol for the identification of potential drugs for COVID-19 using Biomedical Literature Mining, Network analysis and Deep Learning based on disease comorbidity, **Methods in Molecular Biology: Biomedical**



Literature Mining, published by Springer Nature. 2020-21.

**Surajbhan Sevda**, Garlapati VK, Sharma S, Bhattacharjee U, Pandey L, Sreekrishnan TR (2020) Oil and petrochemical industries wastewater treatment in bioelectrochemical systems. In: Integrated Microbial Fuel Cells for Wastewater Treatment (Abbassi R, Khan F, Yadav A and , Garaniya V, (Eds.). Elsevier, USA, pp. 157-173 (ISBN: 9780128174937) Mehendale N, Kumar SPJ, Mani NK, **Surajbhan Sevda**, Naha S, Sharma S, Garlapati VK (2020) Microfluidics in Lipid Extraction. In: Handbook on Miniaturization in Analytical Chemistry (Hussain MC, Editor) Elsevier, USA. pp.21-34. (ISBN: 9780128197639)

**Surajbhan Sevda** and Garlapati VK, Sharma S, Sreekrishnan TR (2020) Potential of High Energy Compounds: Hythane Production. In: Delivering Low-Carbon Biofuels with Bioproduct Recovery ( DrLakhveer Singh & Dr. Durga MadhabMahapatra, Eds), *Elsevier, USA, 2021, pp: 165-176* (ISBN: 9780128218419).

<https://doi.org/10.1016/B978-0-12-821841-9.00007-4>

Bahaa Hemdan, S. Bhuvanesh, **Surajbhan Sevda** (2020) **Low Carbon fuels and electro-biocommodities** .In: Delivering Low-Carbon Biofuels with Bioproduct Recovery ( Dr Lakhveer Singh & Dr. Durga Madhab Mahapatra, Eds), *Elsevier, USA, 2021, pp: 143-164* (ISBN: 9780128218419).

<https://doi.org/10.1016/B978-0-12-821841-9.00004-9>

Garlapati VK, Naha S, Sharma S, Goswami P, **Surajbhan Sevda** (2020) Electro-active biofilms (EAB): Role in a Bioelectrochemical System for waste water treatment and Bioelectricity generation. In: Microbial Biofilms: Properties and Applications in the Environment, Agriculture, and Medicine (Abdul Bakrudeen Ali Ahmed, Ed), Taylor and Francis, CRC Press , USA. pp.207-226 (ISBN: 9780367415068)

Garlapati VK, Sharma S, **Surajbhan Sevda** (2021) Photosynthetic biogasupgrading - An attractive biological technology for biogas upgrading. **In:**

Emerging Technologies and biological systems for biogas upgrading (Aryal N, Ottosen LDM, Kofoed MVW and Pant D, Eds)". *Elsevier, USA*

### Conferences, workshops, FDPs, Webinars organized

Five-day online FDP on "Emerging Trends in Biotechnological Advancements: Challenges and Prospects in Tackling Human Diseases", 13-17 July 2020.

Dr.K. Narasimhulu and Dr. M. Jerold organized Five-day online FDP on **Advances in Biological, Biochemical, Biomedical and Bioenergy (AB4)** (09-13 November 2020)

**Dr. Surajbhan Sevda, Dr. R Satish Babu.** Five-Day Online FDP on "*Advances in Biological Wastewater Treatment Methods: Teaching and Learning Strategies*", September 7-11, 2020 organized by the Department of Biotechnology in association with the Teaching Learning Centre (TLC), NIT Warangal, 2020

**Dr Perugu Shyam.** Faculty Development Programme (FDP) on **Advances in Bioinformatics**, E & ICT Academy, NIT Warangal (Sponsored by Ministry of Electronics and Information Technology (MeitY), GOI). from 10th – 15th May, 2021.

**Dr Perugu Shyam & Dr P Anbumathi.** A Five Day Faculty Development Workshop on "Effective Teaching and Learning Practices in Computational biology". 15th -19th March, 2021 in association with Teaching Learning Center, NIT Warangal.

**Dr Perugu Shyam & Dr M Sandhya.** Online Continuing Education Programme on "Current trends in Data Analytics through hands on Experience" 31st August to 4th September, 2020 in association with CCE, NITW.

**Dr K Narasimhulu & Dr Perugu Shyam.** Online Faculty Development Programme (FDP) on "Advances and Applications of Bioprocess Engineering Techniques" (24th - 28th August 2020) in association with Teaching Learning Center, NIT Warangal.



**Dr Perugu Shyam & Dr M Sandhya.** FDP program on "Teaching and Learning Practices of Data Analysis through Hands-on experience" from March 9th to 14th, 2020 in association with Teaching Learning Center, NIT Warangal.

**Dr. Soumya Lipsa Rath** coordinated a six days online FDP on "Protein-receptor Binding Chemistry" from 17.05.2021-22.05.2021 sponsored by GSBTM, DST.

**Dr.K.Narasimhulu** and Dr.Onkara Perumal P " a **5 day FDP** on "Advances in Biotechnology and Bioinformatics (ABB-2021)" from **22-03-2021 to 26-03-2021.NIT Warangal.**

**Dr.K.Narasimhulu** and Dr.Thyageswar Chandran "a **Two-Day Online National Conference** on "Biological, Biochemical, Biomedical, Bioenergy, and Environmental Biotechnology" (NCB<sup>4</sup>EBT-2021) during **29<sup>th</sup> – 30<sup>th</sup> January, 2021.** NIT Warangal.

**Dr.K.Narasimhulu** and Dr.M. Jerold " a **5 day FDP** on "Advances in Biological, Biochemical, Biomedical and Bioenergy (AB<sup>4</sup>)" from **09-11-2020 to 13-11-2020.** NIT Warangal. **Dr.K.Narasimhulu**

and Dr.PeruguShyam "a **5-Day Faculty Development Programme** on "Advances and Applications of Bioprocess Engineering Techniques" from **24<sup>th</sup> – 28<sup>th</sup> August, 2020.** NIT Warangal.

### **Guest Talks/webinars delivered**

Dr. Anbumathi P, Computational Systems Biology – An Overview, Department of Biotechnology and Department of Chemical Engineering, Vel Tech High Tech Dr Rangarajan Dr Sakunthala Engineering College, Chennai, India. 8 June 2020.

Dr. Anbumathi P, Why systems perspective is essential in biology? As part of 5-day online FDP on "Advances in Biotechnology and Bioinformatics (ABB- 2021)" (22-03-2021 to 26-03-2021), 26 March 2021

Dr. Anbumathi P, Computational Systems Biology and Artificial Intelligence, As part of Advances in Bioinformatics (May 10th -15th, 2021) organized by the Department of Biotechnology in association with

Electronics & ICT Academy, NIT Warangal. 13 May 2021

Dr. Anbumathi P, Systems Biology Models and Hands On, As part of Advances in Bioinformatics (May 10th - 15th, 2021) organized by the Department of Biotechnology in association with Electronics & ICT Academy, NIT Warangal., 14 May 2021

Dr. Anbumathi P, Computational Systems Biology-Why systems Perspective is essential in Biology, Computer Society of India, Tiruchirappalli Chapter 13 July 2021.

Dr. Anbumathi P, Introductory overview of Computational Systems Biology, Cauvery College for Women, Trichy, Tamilnadu, 25 October 2021

Ashish A Prabhu (2021) Yeast cellfactories as an attractive platform for hemicelluloses based biorefineries. International Conference on "Recent Innovations in Chemical and Biological Engineering" (RICBE-2K21) organized by the Departments of Chemical Engineering and Biosciences, RGUKT-Nuzvid in association with IICChE Amaravati Regional Centre - Guntur, on 18-21, September 2021.

Ashish A Prabhu (2021) Process of development of recombinant protein production in non- conventional yeast in the TEQIP-III Sponsored Five days online Faculty Development Program on "Opportunities and Challenges in Different Sectors of Biotechnology Post- Pandemic" organized by the Department of Biotechnology, UIET, Kurukshetra University Kurukshetra from 8th-12th March, 2021.

Ashish A Prabhu (2021) Augmentation in functional properties of rice bran by adapting biotechnological based process strategies. First virtual International Scientific Conference 2020, which was organized by Al-Qasim Green University on December 1 – 3, 2020 in Babylon, Iraq.

Dr. Chockalingam S, Challenges and Prospects in anti-cancer therapies, International Webinar on Biotechnology: Application Areas and Development

Process, Alagappa University, Karaikudi, 01 June 2020.

Dr. Chockalingam S, Prospects in anti- cancer therapies, Recent Advancements in Medical Biotechnology Research, Government College of Technology, Coimbatore, 03 August 2020.

Dr. Chockalingam S, Flow Cytometry: Applications in Biological Research, Advances in Bio techniques, MIET Meerut, 11 Oct 2020.

Dr. Chockalingam S, Creative Commons: the use of free materials and uploading documents with Creative Common licenses, Effective online teaching and conducting examinations with Moodle LMS, NIT Silchar, 10 April, 2021.

Dr. Jerold delivered an Invited guest lecture on a AICTE Sponsored Short Term Training Programme on "**Fostering an Effective Research Environment and Industrial Collaborations in Engineering Education**" in the Department of Chemical Engineering, **St Joseph's College Of Engineering**, Old Mamallapuram Road, Kamaraj Nagar, Semmancheri, Chennai, Tamil Nadu, India.

Dr. Jerold delivered an Invited guest lecture on a FDP program **Advances in Biological, Biochemical, Biomedical and Bioenergy (AB4)** in the Department of Biotechnology, National Institute of Technology Warangal, Telangana, India.

Dr. Jerold delivered an Invited guest lecture on a National Webinar on Environmental Biotechnology, Sponsored by Department of Biotechnology, Ministry of Science and Technology, Government of India, under STAR Programme at St. Mary's College (Autonomous), Thoothukudi, Tamil Nadu, India.

**Dr. Surajbhan Sevda**, Basic Methods for Characteristics of Wastewater. Five-Day Online FDP on "Advances in Biological Wastewater Treatment Methods: Teaching and Learning Strategies", September 7-11, 2020 organized by the Department of Biotechnology in association with the Teaching Learning Centre (TLC), NIT Warangal, 2020.

**Dr. Surajbhan Sevda**, Advanced Methods for Characteristics of Wastewater. In Five-Day Online FDP on "*Advances in Biological Wastewater Treatment Methods: Teaching and Learning Strategies*", September 7-11, 2020 organized by the Department of Biotechnology in association with the Teaching Learning Centre (TLC), NIT Warangal, 2020

**Dr. Surajbhan Sevda**, Green Energy Generation in India: Present Scenario and Future Prospects. In online 5-day Faculty Development Program (FDP) cum Training Workshop from 13-17 July, 2020 on "*Environment, Water And Disaster Risk Reduction*" at Sharda University in collaboration with National Institute of Disaster Management (NIDM), Ministry of Home Affairs, New Delhi.

**Dr. Surajbhan Sevda**. Advance analysis methods of water and wastewater. In *Five-Day Online Faculty Development Program on "Teaching And Learning Strategies For Frontiers In Membranes For Wastewater"* organized by the Department of Chemical Engineering in association with the Teaching Learning Centre (TLC), NIT Warangal, 8<sup>th</sup> – 12<sup>th</sup> March, 2021.

**Rama Raju. B** expert lecture on "Metabolic engineering for the production of terpenoids" in "Advances in Biological, Biochemical, Biomedical and Bioenergy (AB4)" (09-11-2020 to 13-11-2020), Department of Biotechnology, National Institute of Technology Warangal.

**Rama Raju. B** expert lecture on "Isolation of novel cellulases through metagenomics approach from buffalo rumen" "Advances and Applications of Bioprocess Engineering Techniques" (24-08-2020 to 28-08-2020), Department of Biotechnology, National Institute of Technology Warangal.

**Dr. Soumya Lipsa Rath** delivered a lecture on "Protein Secondary structures" in an Online FDP on Basics of Bioinformatics, Organized by E & ICT Academy, NITW in association with University College of Engineering BIT Campus on 27.05.2021

**Dr. Soumya Lipsa Rath** delivered a lecture on "Ramachandran Plot and propensity" in an Online FDP on Basics of Bioinformatics, Organized by E & ICT Academy, NITW in association with University College of Engineering BIT Campus on 28.05.2021

**Dr. Soumya Lipsa Rath** delivered an online lecture on "Molecular Modelling and Simulation" in the online FDP on "Protein-receptor Binding Chemistry" conducted by The MSU Baroda and NIT Warangal on 20.05.2021.

**Dr. Soumya Lipsa Rath**, Assistant Professor, Department of Biotechnology, gave an online oral presentation at the International conference on COVID-19 Drug and Diagnostic Developments organized by Sciinov, New Jersey, United States on 6th February, 2021

### **New lab established/ Equipment and Software procured**

Plant tissue culture research lab was established in November 2019 at Biotechnology Department

EPPENDORF -cold centrifuge, High performance liquid chromatography (WATERS-1525) procured under DST-SERB (EEQ)GRANT

Transport Phenomena in Bioprocess Systems Lab Established for B.Tech Biotechnology Students (2020).

### **Awards/ Recognitions/ Achievements**

### **PhD Research guidance**

Mr. Paramjeet Saroj has completed Ph.D on 18th June 2020 under the guidance of Dr.K.Narasimhulu. Title of the thesis: Screening, Isolation and characterization of thermophilic fungus in the production of  $\beta$ - glucosidase and its application in bioethanol production.

Ms. [Pola Madhuri](#) has completed PhD on 16th June 2020 under the guidance of Dr.R.satish Babu. Title of the thesis: Studies on L-Asparaginase production from novel Bacterial endophyte of *Ocimum tenuiflorum*.

Ms. Sumithra B has completed PhD on 24th August 2020 under the guidance of Dr. Asim Bikas Das. Title of the thesis: Genome-wide analysis of Sam68 as a prognostic biomarker in cancer and fabrication of a biosensor for clinical diagnosis.

### **Department Outreach Activities**

The final year students of B.Tech Biotechnology have participated in iGEM competition 2021 and also qualified for the Giant jamboree event. This is the first ever NIT team to participate in iGEM. iGEM is a global competition held at MIT Boston/Cambridge, aimed at the advancements in synthetic biology since 2003. The students of NIT Warangal has worked on the project degossypolyzation of cotton seeds using enzymatic methods. This project would eventually help farmers and cotton based industries.

## Department Association/Students Clubs Activities

Foundation of iGEM NIT Warangal student association to compete in iGEM competition which is an annual, worldwide synthetic biology contest aimed at undergraduate students. In this competition, teams design, build and test a system using biological parts such as gene sequences, plasmids, proteins and standard molecular biology techniques, to solve a real-world problem.

Prof. Keerti S. Rathore Professor, Institute of Plant Genomics and Biotechnology, Texas A&M University delivered a lecture on Ultra-Low Gossypol Cottonseed as promising source for protein need of the future on 3 July 2021.

### BioNITWork:

#### **A global community of Biotechnology students/ alumni from National Institute of Technology, Warangal (NITW)**

A decisive factor in one's professional success is networking. BioNITWork is a global community of Biotechnology students/ alumni from National Institute of Technology, Warangal (NITW), which aims to facilitate interactive sessions and provide a platform for better networking opportunities. Through this, we are determined to develop our alumni society which can assist in building such relationships with fellow students and be able to help each one of them, career or otherwise.

### NITW BAM:

NITW Biotechnology Alumni Meet (BAM) was the first virtual alumni meet organized **on 23<sup>rd</sup> and 24<sup>th</sup> January 2020** to expand the network of the Department of Biotechnology, NITW and be able to connect alumni to each other, as well as the current students. This event has various sections such as Biological Research, Industrial Research, Entrepreneurship, IT/Technology based services etc. to cover the umbrella of opportunities one has after college and in their respective careers.





## Any other Department Specific

### Highlights of the department

**Media coverage of online Five-Day Online FDP on "Advances in Biological Wastewater Treatment Methods: Teaching and Learning Strategies",** September 7-11, 2020 organized by the Department of Biotechnology in association with the Teaching Learning Centre (TLC), NIT Warangal, 2020.



## Heading in news: Media coverage of Online education only solution in Pandemic times: Warangal NIT Director

Director Prof. NV Ramana Rao inaugurated a five-day online FDP in Machine Learning for IoT and Waste Water Treatment through a Google meeting **Warangal Urban**: Prof NV Ramana Rao, Director, National Institute of Technology (NIT), Warangal, said faculty members need to use latest tools and techniques to reach students in the pandemic situation. "NIT Warangal is making efforts to turn online teaching accessible to every student. Online teaching and learning is the only solution in the current education scenario," he added. He inaugurated a five-day online Faculty Development Programme (FDP) in Machine Learning for IoT and Waste Water Treatment through a Google meeting here on Monday. Addressing the participants, Prof NV Ramana Rao said it was a critical time for the education sector to reach students. Covid-19 pandemic made the education sector move to online mode and it needs to be continued further. Interactive and innovative methods need to be established through online education," he added.



Teaching Learning Centre (TLC) in-charge Prof A Ramachandraiah said participants needed to update knowledge continuously through online mode of teaching and learning. Prof Radha Krishna, Prof Anjaneyelu, Dr Satish Babu, Dr Suresh Babu, Dr Srinivas and Dr Suraj were present.

[https://telanganatoday.com/online-education-only-solution-in-pandemic-times-warangal-nit-director?fbclid=IwAR3km8uy5JYHC\\_4bvpm5o625Yuej2xGJ3r0PeO4V88IrLKD9TZLGe7YJyPw](https://telanganatoday.com/online-education-only-solution-in-pandemic-times-warangal-nit-director?fbclid=IwAR3km8uy5JYHC_4bvpm5o625Yuej2xGJ3r0PeO4V88IrLKD9TZLGe7YJyPw)

## Summary

S.No.	Activity	Number
<b>1</b>	<b>Publications (Peer Reviewed Journals/ conferences)(SCOPUS/SCI)</b>	
	National Journals	
	International Journals	
	Total	37
	National Conferences	
	International Conferences	
	Total	33
<b>2</b>	<b>Funded Research Projects/SPARC projects (2019-20)</b>	
	Completed Projects	
	DBT, SERB	
	Ongoing Projects	3
	IMPRINT PROJECTS	
	FIST PROJECT	
	BRICS project	
	DST, SERB, BRNS, DRDO	3
<b>3</b>	<b>SPARC Project Workshops</b>	
<b>4</b>	<b>Consultancy Works (2019-20)</b>	
<b>5</b>	<b>Patents</b>	
	Awarded	



	Filed	
<b>6</b>	<b>Books and Book Chapters</b>	
	Books	3
	Book Chapters	7
<b>7</b>	<b>Conferences/ Workshops/GIAN courses/FDPs Conducted</b>	13
<b>8</b>	<b>Guest talks/ Webinars delivered</b>	26
<b>9</b>	<b>New Labs Established (Equipment/Software Procured)</b>	3
<b>10</b>	<b>Awards/Recognitions/Achievements</b>	
<b>11</b>	<b>Research Guidance (Completed in 2019-20)</b>	3
<b>12</b>	<b>International Visits of the Faculty Members/ students</b>	
<b>13</b>	<b>Students Achievements</b>	
	Placements	
	B.Tech	
	MTech	
	Higher Education (M.Tech, PhD at IITs & Abroad)	
	Lab Development Activities	
	Conference visits	
<b>14</b>	<b>Civil Engineering Association Activities</b>	
<b>15</b>	<b>Distinguished Guests visiting the Department/Delivering Expert Lecture/Keynote Address</b>	1
<b>16</b>	<b>Outreach Programmes</b>	1

# DEPARTMENT OF MATHEMATICS

## Brief History of the Department, Academic Programs

*The Department of Mathematics is one of the highly reputed Departments in the Institute which functions with excellence as its motto. The Department was started in the year 1959 along with other Engineering and Science Departments and has established itself as a dynamic centre for academic and research activities. The Department offers basic courses in Mathematics for B.Tech. At post-graduate level, the Department offers well-designed diverse courses for all programs of M.Tech., M.C.A, M.B.A and M.Sc. Tech (Engg. Physics) and also offers Open Electives for all UG, PG and Ph.D. programs.*

*The Department offers two (Four Semesters) PG programs namely: M.Sc. (Applied Mathematics) and M.Sc. (Mathematics & Scientific Computing). In the AY 2021-2022, a FIVE years Integrated M.Sc. (Mathematics) program has been started. The Department since its inception in 1959 is known to be an active research centre in Mathematics. The Department offers Ph.D. program in Mathematics on both Regular and Part-Time basis, and also under Quality Improvement Program (QIP). The Department is the only QIP centre for Mathematics in India. Number of Ph.D. awarded is 120 as on November 2021.*







*The M.Sc. programs for both streams of Mathematics are designed with one laboratory course in each semester in addition to the regular rigorous theory courses. They inculcate a spirit of practical applications of mathematical concepts and also instil enthusiasm for research activity. Special emphasis is laid on promoting team spirit and improving the oral communication skills of the students, which enables all-round development of the students.*



## Faculty Details:

S. No.	Name of the Faculty Member and Designation	Highest Qualification	Research Interests	Photograph
1.	Prof. Ramana Murthy J V Professor (HAG)	Ph. D	Fluid Mechanics; Homotopy Analysis Method; Perturbation Methods	
2.	Prof. Reddy Y N Professor	Ph. D	Numerical Analysis	
3	Prof. Kasi Viswanadham K N S Professor	Ph. D	Numerical Analysis, Finite Element Methods, Optimization Techniques	
4	Prof. Debashis Dutta Professor	Ph. D	Operations Research, Statistics & Mathematical Modelling	
5	Prof. Srinivasacharya D Professor	Ph. D	Fluid Mechanics; Computational Fluid Dynamics; Micropolar and Couple Stress Fluids; Convective Heat and Mass Transfer; Bio Mechanics; Flow through Porous Media	
6	Dr. P. Muthu Associate Professor & HOD	Ph. D	Computational Fluid Dynamics (CFD) ; Bio Mechanics ; Mathematical Modelling ; Hydrodynamic Lubrication ; Mathematical Biology	

7	Dr. Hari Ponnamma Rani Associate Professor	Ph. D	Nonlinear dynamics, Finite difference methods, Finite volume methods, Computational Fluid Dynamics, Instability and vortex analysis, Heat and Mass Transfer problems.	
8	Dr. Benerji Babu A Associate Professor	Ph. D	Fluid Dynamics (Geophysical Fluid Dynamics)	
9	Dr. R. S. Selvaraj Associate Professor	Ph. D	Algebraic Coding Theory (It is a branch of Information Theory; It is a mathematical discipline for which Linear Algebra and Abstract Algebra will be essential)	
10	Dr. Pranitha J Assistant Professor	Ph. D	Fluid Dynamics; Heat transfer; Porous Media	
11	Dr. Ch. Ramreddy Assistant Professor	Ph. D	Fluid Dynamics, Convective Heat and Mass Transfer, Porous Media, Computational Methods & Its Stability	
12	Dr. D. Bhargavi Assistant Professor	Ph. D	Computational Fluid Dynamics, Numerical Heat transfer through porous media	
13	Dr. Satyanarayana Engu Assistant Professor	Ph. D	Partial Differential Equations	

14	Dr. Y Sreenivasa Rao Assistant Professor	Ph. D	Public Key Cryptography and Its Applications (Key distribution, Cloud Security, Secure data sharing and data retrieval from cloud, Blockchain Security)	
15	Dr. Kaladhar K Assistant Professor	Ph. D	Fluid Dynamics, Inventory management	
16	Dr. Deepika Neela Assistant Professor	Ph. D	Hydrodynamic Stability; Convection in Porous media.	
17	Dr. Triveni Prasad Shukla Assistant Professor	Ph. D	Quasilinear Partial Differential Equations, Nonlinear Waves	
18	Dr. Srinivas Jangili Assistant Professor	Ph. D	Heat Transfer Analysis, Analytical and Semi-analytical Methods.	
19	Dr. Jagannath Roy Assistant Professor	Ph. D	Multi-Criteria and Mutli-Objective Decision Making, Portfolio selection, Fuzzy Optimization	

## Journal Publications

R.Naresh, **J V Ramana Murthy**, V.Radhakrishna Murthy, J Srinivas; effect of Magnetic field on unsteady flow of dusty fluid due to constant pressure gradient through a circular cylinder: An analytical Treatment; Lecture Notes in Mechanical Engineering, 2021

Pavan Kumar Reddy M, **J V RamanaMurthy**; Stokes flow and heat transfer past acircular cylinder in a square cavity with suction/injection on side walls; Heat transfer- Wiley (2020), DOI: 10.1002/htj.21776

Pavan Kumar Reddy M, **J V RamanaMurthy**; Stokes flow and heat transfer past a circular cylinder in a square cavity; with suction/injection on opposite-side walls, SN Applied Sciences (2020) 2:496, <https://doi.org/10.1007/s42452-020-2250-1>

M. Pavankumar Reddy, and **J. V. Ramana Murthy**; Effect of magnetic field on couple stress fluid flow in a rectangular channel; AIP Conference Proceedings 2246, 020057 (2020); <https://doi.org/10.1063/5.0014635>

**YN Reddy**, Sireesha and K Paneendra, Computational Results of Differential Difference Equations with mixed shifts having layer structure using cubic non-polynomial spline, Journal of Mathematics Computing Science, 10 (2020) : 1309-1326 (SCIK Pub. Co.).

**YN Reddy** and RP Singh, A fitted method for Differential Difference Equations having boundary layers via deviating argument and interpolation, Journal of Mathematical and Computational Sciences, 10 (2020) : 2467-2492 (SCIK Pub. Co.).

**YN Reddy** and RP Singh: Perturbation Iteration Method for solving Differential Difference Equations having boundary layer, Journal of Informatics and Mathematical Sciences, 12(2020) 3: 223-232 (RGN Publishers).

**YN Reddy** and RP Singh: A fitted second order finite difference method for singularly perturbed Differential Difference Equations exhibiting boundary layers, Communications in Mathematics and Application, 11(2020) 4: 617-633 (RGN Publishers).

**YN Reddy** and RP Singh: A fitted deviating argument and interpolation scheme for the solution of Singularly perturbed Differential Difference Equations having layers at both ends, Journal of Mathematical and Computational Sciences, 11(2021) 1: 856-873 (SCIK Pub. Co.).

**YN Reddy** and RP Singh: A fitted numerical method for a class of Singularly perturbed Differential Difference Equations, Journal of Mathematical and Computational Sciences, 11 (2021) 3: 2847-2873 (SCIK Pub. Co.).

**Debashis Dutta** & Subhabrata Rath, Job Scheduling on Computational Grids Using Multi Objective Fuzzy Particle Swarm Optimization. In: Sharma T.K., Ahn C.W., Verma O.P., Panigrahi B.K. (eds) Soft Computing: Theories and Applications. Advances in Intelligent Systems and Computing, vol 1380. Springer, Singapore. [https://doi.org/10.1007/978-981-16-1740-9\\_28](https://doi.org/10.1007/978-981-16-1740-9_28) (Springer).

Kumar, Pavan, and **D. Dutta**. A Deteriorating Inventory Model with Uniformly Distributed Random Demand and Completely Backlogged. Numerical Optimization in Engineering and Sciences: Select Proceedings of NOIEAS 2019, 979 (2020): 213.

**Srinivasacharya, D** and K. Sita Ramana, Computational Analysis of Double Diffusive Bioconvection of a Nanofluid Past an Inclined Wavy Surface, Int. J. Appl. Comput. Math

Om Prakash Meena, Pranitha J. and **Srinivasacharya, D**, Mixed convection fluid flow over a vertical cone saturated porous media with double dispersion and injection/suction effects, Int. J. Appl. Comput. Math, Vol. 7, issue 3, Article : 59, 2021, <https://doi.org/10.1007/s40819-021-00990-y>

Dipak Barman and **Srinivasacharya, D.**, The variable gravity field and viscous dissipation effects on the convective instability in a porous layer with throughflow: Brinkman model, Journal of Porous Media, 24(6):1-13, 2021



**Srinivasacharya, D** and Dipak Barman, Linear stability of convection in a vertical channel filled with nanofluid saturated porous medium, *Heat Transfer*, 50: 3220– 3239, 2021, <https://doi.org/10.1002/htj.22025>

**Srinivasacharya, D** and K. Sita Ramana, Thermal radiation and double diffusive effects on bioconvection flow of a nanofluid past an inclined wavy surface, *Thermal Science and Engineering Progress*, Vol. 22, article id 100830, 2021

Kaladhar, K., Madhusudhan Reddy, K., **Srinivasacharya, D.**, Influence of Navier-slip conditions on natural convection flow through an inclined channel with inclined magnetic field, Soret and Hall current effects, *International Journal of Engineering Systems Modelling and Simulation*, Vol.12 No.1, pp.61 – 71, 2021

**Srinivasacharya, D** and Dipak Barman , The variable gravity field and viscous dissipation effects on the double diffusive and Soret driven convective instability in a porous layer with throughflow, *Int. Commun in Heat and Mass Transfer*, Vol. 120, article id. 105050, 2021

Dipak Barman and **Srinivasacharya, D.**, Stability of Nanofluid flow in a vertical porous channel, *Special Topics & Reviews in Porous Media — An International Journal*, Vol. 11(5):477–491 (2020)

Shafeeurrahman, Md, and **Srinivasacharya, D.**, Joule Heating Effect on Entropy Generation in a Chemically Reacting Nanofluid through Vertical Channel, *The Int J Engg and Sci*, Vol. 2, pp., 66-73, 2020

Madhusudhan Reddy, K., Kaladhar, K. and **Srinivasacharya, D.**, Inclined magnetic field effect on natural convective slip flow through a porous channel with convective boundary, *The Int J Engg and Sci*, Vol. 1, pp.89-94, 2020

**Srinivasacharya, D.** and I. Sreenath, Bioconvection in a couple-stress fluid flow between concentric cylinders, *The Int J Engg and Sci*, Vol. 1., pp. 81-88,2020

**Srinivasacharya, D** and Hima Bindu, K., Analysis of Entropy Generation between porous disks due to Micropolar Fluid flow with MHD effect, *The Int J Engg and Sci*, Vol. 1, pp. 36-42, 2020

Jagadeeshwar P. and **Srinivasacharya, D.**, Melting Heat Transfer and Hall Currents on the Flow over an Exponentially Stretching Sheet with Thermal Radiation, *The Int J Engg and Sci*, Vol. 1., pp. 09-21, 2020

**Srinivasacharya, D.** and Sreenath,I., Bioconvection of Couple Stress Fluid in a Channel with Expanding or Contracting Walls, *Mathematical Modelling of Engineering Problems*, Vol 7, No 2, pp. 283 – 292, 2020

Varunkumar, M., & **Muthu, P.**, Fluid Flow and Solute Transfer in a Permeable Tube with Influence of Slip Velocity. Discontinuity, Nonlinearity, and Complexity, 9(2020) 1: 153-166 (L & H Scientific Publishing, LLC).

**Muthu, P.**, & Pujitha, V., Effect of Magnetic Field and Non-Uniform Surface on Squeeze Film Lubrication. *Journal of Applied Nonlinear Dynamics*, 9(2020) 2: 223-230 (L&H Scientific).

G. Radhakrishnamacharya, **P. Muthu** and M. Varunkumar, Mathematical model of fluid flow and solute transfer in a permeable channel with slip velocity at the boundaries, *Proceedings of the National Academy of Sciences - A : Physical Sciences, India*. (To appear)

**Hari Ponnamma Rani, V** Leela, Pulla Nagabhushana, R Gangadhara Reddy, Heat Transfer characteristics of Mixed Convective Magnetohydrodynamic Counter-Current Two-Phase Flow in Rotating Inclined Micro-Porous Channel with Slip Velocity and Asymmetric Thermal Boundary Conditions Using LTNE Model, *Journal of Thermal Science and Engineering Applications*, 14(2021) 6: 061004 (ASME).

Amgoth Ashok, **Hari Ponnamma Rani, K.V.** Jayakumar, Monitoring of Dynamic Wetland Changes using NDVI and NDWI based Landsat Imagery, *Remote Sensing Applications:*



Society and Environment, (2021) : 100547 (Elsevier).

P. Madasamy, M. Mukunthan, P. Chandramohan, T.V. Krishna, Mohan, Andrews Sylvanus, E. Natarajan, **H.P. Rani**, S. Velmurugan, S. Rangarajan, Influence of bend geometry on flow accelerated corrosion under neutral pH conditions, Engineering Failure Analysis, 122 (2021): 105127 (Elsevier).

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Vekamulla Narayana, **Hari Ponnamma Rani**, Analysis of visualization techniques of bottom heated lid-driven square cavity, Heat Transfer, Heat Transfer, 49 (2020) 6: 3549-3559 (WILEY).

**Hari Ponnamma Rani**, Vekamulla Narayana, Yadagiri Rameshwar, Sergey Vladimirovich Starchenko, Aspect Ratio Effects on Bottom Heated 2D Cavity using Energy Streamlines and Field Synergy Principle, Latin American Applied Research / Heat and Mass Transfer, An International Journal, 50(2021) 1: 41-46.

Irrinki Gnana Sudha, **R. S. Selvaraj**, MacWilliams Type Identities for Linear Codes on Certain Pomsets: Chain, direct and ordinal sum of pomsets Discrete Mathematics, 343(2020) 4: 111782 (Elsevier).

Irrinki Gnana Sudha, **R. S. Selvaraj**, MDS and I-Perfect Codes in Pomset Metric IEEE Transactions on Information Theory, 67(2021) 3: 1622 - 1629 (IEEE).

**Pranitha Janapatla**, Om prakash Meena, D Srinivasacharya, Influence of Soret and Dufour on mixed convection flow across a vertical cone, Heat Transfer, (2021): <https://doi.org/10.1002/htj.22277> (WILEY).

**J Pranitha** and Om Prakash Meena, Influence of Double Dispersion on Natural Convection Flow over a Vertical Cone Saturated Porous Media with Soret and Dufour Effects,

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**Pranitha Janapatla**, Om prakash Meena, D Srinivasacharya, Mixed Convection Fluid Flow Over a Vertical Cone Saturated Porous Media with Double Dispersion and Injection/Suction Effects, International Journal of Applied and Computational Mathematics, 7 (2021) 3: 1 - 20 (Springer).

Rishi Raj Kairi, **Ch. RamReddy**, Nonlinear double diffusive convection from a radiative slender paraboloid in a non-Darcy Porous medium, Journal of Theoretical and Applied Mechanics, 50 (2020: 205 - 221 (Bulgarian Academy of Sciences).

**Ch. RamReddy**, Abhinava Srivastav, Effect of dispersion on thermally stable stratified power-law fluids over vertical frustum of a cone in a non-Darcy porous medium: Flow separation, Heat Transfer, 50(2021) 3: 2380 - 2402 (WILEY).

N. Raji Reddy, **Ch. RamReddy**, Significance of thermophoretic deposition of particles on convective flow between vertical channel in a porous medium with Soret effect, The International Journal of Engineering and Science, 3 (2020): 01 - 07 (<https://www.theijes.com>).

**Ch. RamReddy**, Har Lal Saran, Effects of thermal and solutal dispersions on free convective flow of Newtonian fluid over a cone in a non-Darcy porous medium

The International Journal of Engineering and Science, 2 (2020): 01-08 (<https://www.theijes.com>).

Rishi Raj Kairi, **Ch. RamReddy**, and Subrata Roy, Influence of heat generation/absorption on the nonlinear convective flow of a Casson fluid over a horizontal plate, Discontinuity, Nonlinearity, and Complexity, Accepted in Oct 2020 (DOI not found)

**Ch. RamReddy**, Abhinava Srivastav, Analysis of Ostwald-de Waele power-law nanofluid flow in a non-Darcy porous medium with an efficient spectral algorithm, Discontinuity, Nonlinearity, and Complexity, Accepted in Jan 2021. (DOI not found)

**Ch. RamReddy**, Abhinava Srivastav, Efficient spectral method for stable stratified power-law fluid flows with dispersion over convectively heated truncated cone in a non-Darcy porous medium, International Journal of Applied and Computational Mathematics, 7 (2021) 3: 1-17 (Springer).

**Ch. RamReddy**, Abhinava Srivastav, The second law analysis in free convective flow of pseudoplastic and dilatant fluids saturated non-Darcy porous medium with viscous dissipation: Forchheimer model, Journal of Thermal Analysis and Calorimetry, (2021): [doi.org/10.1007/s10973-021-10823-1](https://doi.org/10.1007/s10973-021-10823-1) (Springer).

**Ch. RamReddy**, Abhinava Srivastav, Numerical study and error estimation in power-law nanofluid flow over a vertical frustum of a cone, Indian Journal of Physics, (2021): [doi.org/10.1007/s12648-021-02055-8](https://doi.org/10.1007/s12648-021-02055-8) (Springer).

**Ch. RamReddy**, Abhinava Srivastav, Aqueous Titanium alloy-MWCNTs hybrid nanofluid flow in a non-Darcy porous medium, Computational Thermal Sciences: An International Journal, 13(2021) 5: DOI: 10.1615/ComputThermalScien.2021037040 (Begell Digital Library).

**Satyanarayana Engu**, Manas R Sahoo, Venkatramana P. Berke, Solutions to viscous Burgers equations with time dependent source term, Electronic Journal of Differential Equations, 02 (2021): 1 – 16 (The University of Texas).

**Satyanarayana Engu**, M. Manasa , P. B. Venkatramana, Generalized solutions of an

inhomogeneous inviscid Burgers equation, Indian Journal of Pure and Applied Mathematics, (2021). <https://doi.org/10.1007/s13226-021-00099-4> (Springer).

Suvradip Chakraborty and **Sreenivasa Y. Rao** and C. Pandu Rangan, Efficient single round attribute-based authenticated key exchange protocol, International Journal of Computer Mathematics: Computer Systems Theory, (2021): DOI: 10.1080/23799927.2021.1873192 (Taylor and Francis).

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**K Kaladhar**, E Komuraiah, KM Reddy, Influence of cross diffusions on natural convection flow through annulus region with Navier slip and convective boundaries, e-Journal of Analysis and Applied Mathematics, 1 (2020): 53-66 (Sciendo).

Kolla Kaladhar; K. Madhusudhan Reddy; **D. Srinivasacharya**, Influence of Navier-slip conditions on natural convection flow through an inclined channel with inclined magnetic field, Soret and Hall current effects, Int. J. of Engineering Systems, Modelling and Simulation, 12(2021) 1: 61 – 71 (Inderscience).

T. Siva, **S. Jangili**, and B. Kumbhakar, Heat transfer analysis of MHD and electroosmotic flow of non-Newtonian fluid in a rotating microfluidic channel: an exact solution, Applied Mathematics and Mechanics, 42 (2021): 1047–1062 (Springer).

K. Adhikary, **J. Roy**, S. Kar, Fuzzy random Newsboy problem with chance distribution, Journal of Intelligent & Fuzzy Systems, 39 (2020) 5: 6857 - 6868 (IOS press).

## Conference Oral presentations

**Hari Ponnamma Rani**, Yadagiri Rameshwar, K Naresh, Sergey Vladimirovich STARCHENKO, Heat Transfer Analysis of Tangentially Rotating Fluid Flow past a Semi-Infinite Vertical Cylinder Kept in Uniform Horizontal Magnetic Field – Non-linear Regression and Back-propagation Neural Network, Oral Presentation, Problems of Geocosmos conference, Russia, Paper id 046.

**Hari Ponnamma Rani**, Vekamulla Narayana, Yadagiri Rameshwar and Sergey V. Starchenko, Numerical Flow Analysis in Gamma shaped enclosure: Energy Streamlines and Field Synergy, Problems of Geocosmos conference, Russia Paper id 056.

**Hari Ponnamma Rani**, Challenges and Changes: (IM)Migrant, Workforce - Case

Study:Canada and India, International Webinar (FDP) on Professional Development of Women Engineers in Post Covid Era, Organised by MBITS, Kerala 20th-21st July 2020.

## Funded Research Projects

**Prof. D. Srinivasacharya**, Study of different thermo-physical effects on Prandtl-Eyring Nanofluid flow and heat transfer due to rotating disk, DST - FSER under TARE (Mathematical Sciences), Project No SERB/F/5959/2020-2021 dated 21st December 2020, Rs. 18.30 Lakhs.

**Dr. Satyanarayana Engu**, On the solutions of inhomogeneous Burgers equations, CSIR, project No.25(0302)/19/EMR-II, Rs. 20 Lakhs.

S. No.	Title	Total Amount sanctioned	Funding agency and Project No.	Installment 1, 2019-2020	Installment 2, 2020-2021	Installment 3, 2021-2022
1	Study of different thermo-physical effects on Prandtl-Eyring Nanofluid flow and heat transfer due to rotating disk	Rs. 18.30 Lakhs	DST – FSER, Project No SERB/F/5959/2020-2021 dated 21st December 2020	----	Rs. 3.35 lakhs	----
2	On the solutions of inhomogeneous Burgers equations	Rs. 20 Lakhs	CSIR & No.25(0302)/19/EMR-II	6,02,000/- Rs	---	---

## Conferences, workshops, FDPs, Webinars organized

**Dr. P. Muthu, Dr. H.P. Rani, Dr. D. Bhargavi**, organized 5-day FDP on “Teaching and Learning Strategies of Differential Equations and Applications in Science and Engineering”, December 28, 2020 to January 01, 2021, sponsored by TLC NITW.

Dr. M. Sandhya, **Dr. Y. Sreenivasa Rao**, Organized 5 day Online Short Term Course on “Data Analytics using Python”, February 08-

12, 2021, in association with Center for Continuing Education, NIT Warangal.

## Guest Talks/webinars delivered

**Prof. K.N.S.Kasi Viswanadham**, Computational Methods and Analysis for Engineers, NIT, Jalandhar, 20-11-2020.

**Prof. K.N.S.Kasi Viswanadham**, Application of Mathematics in Engineering, KPR Institute of Engineering and Technology, Coimbatore, 20-7-2020.

**Prof. Debashis Dutta**, Uncertainty in Optimization and Machine Learning, NIT Warangal, 8-3-2021.

**Dr. P Muthu**, Mathematical Models of physiological flows, INVITED LECTURE, 2nd International Conference on Mathematical Techniques and Applications (e-ICMTA-2021), SRM University, Chennai, 24-03-2021.

**Dr. P Muthu**, Mathematical Models of Physiological Fluid Flows, 86 th Annual Conference of IMS 2020, Symposium on BIOMECHANICS, VIT-Vellor, 18-12-2020.

**Dr. P Muthu**, Analysis of Variance, National Level Faculty Development Program on Role of Statistics in Research Methodology, LFDC, Hyderabad, 06-03-2021.

**Dr. P Muthu**, Numerical Solution Of Navier-Stokes Equations, Department of AS&H (Mathematics), Tirumala engineering college, jonnalagadda, Guntur, June 17 to 21, 2021.

**Dr. Hari Ponnamma Rani**, Finite Volument method - Innovative applications, One Week Online FDP on Exploring Innovations in Mathematical Sciences (EIMS 2020) organized by the Department of Mathematics, Sathyabama Institute of Science and Technology, Chennai from 25th June – 1st July 2020.

**Dr. Hari Ponnamma Rani**, Applications of Finite Volume methods in Engineering, Six Day FDP on Applications of Mathematics in Engineering organised by Department of Mathematics, KPR Institute of Engineering and Technology, Coimbatore. 20th July -25th July 2020, 24-07-2020.

**Dr. Hari Ponnamma Rani**, Research Projects, ONLINE Refresher course for Mathematics lecturers of Telangana Tribal & Social welfare Institutions (15th to 30th June 2020), 22-06-2020.

**Dr. Hari Ponnamma Rani**, Finite Volument methods real time applications, FDP on Mathematics and its applications in Science and Technology, Department of Mathematics, School of Basic Sciences, SRM Institute of Science and Technology, Tamil Nadu. 17-28th July 2020, 08-07-2020.

**Dr. Hari Ponnamma Rani**, Code of Ethics and Educator, AICTE sponsored Two weekFDP Nurturing Morals, work Ethics and Accountability for Technical Teachers,

organised by Department of Computer Science, VRSE College, Vijayawada.

**Dr. Hari Ponnamma Rani**, Differential Equations and its Applications, One month Refresher course organised by UGC-HRDC Bangalore University, 22-01-2021.

**Dr. Hari Ponnamma Rani**, Air Flow in a Backward-Facing Step: Dynamical systems approach, International Conference on Applied Mathematics & Civil Structures (ICAMCS 2021), JOINTLY ORGANIZED BY DEPARTMENTS OF MATHEMATICS & CIVIL ENGINEERING, SSN COLLEGE OF ENGINEERING, CHENNAI. 12-13th Feb. 2021.

**Dr. Hari Ponnamma Rani**, Role of Parallel Processing and Artificial Neural Network in Solution of Differential Equations, One month Winter school on Mathematics, Computer Science & Information Technology UGC-Human Resource Development Centre, Kannur University, Kerala, 25-02-2021.

**Dr. Hari Ponnamma Rani**, Nonlinear Dynamical Systems and its Applications , National Webniar on Nonlinear Dynamical Systems and its Applications organised by Department of Physics, Theivani Ammal College for Women, Villupuram, Tamil Nadu, 17-05-2021.

**Dr. Hari Ponnamma Rani**, Role of Mathematics in Emerging Technologies, Webniar organized by Department of Mahematics, Dr. N.G.P. Arts and Science College, Coimbatore, Tamil Nadu, 25-05-2021.

**Dr. R. S. Selvaraj**, MDS Codes and Perfect Codes with Pomset Metric, 28th International Conference for FIM, Stella Maris College & SSN College of Engg, Chennai, 27-11-2020.

**Dr. R. S. Selvaraj**, Ubiquitous Mathematics, Kristu Jayanti College, Bengaluru, 04-12-2020.

**Dr. R. S. Selvaraj**, Algebraic Coding Theory & Code-Based Crypto, Bharath Institute of Higher Education and Research, Chennai, 22-01-2021.

**Dr. R. S. Selvaraj**, How to conduct an Online examination using Moodle? - Part-2, NIT Silchar, 09-04-2021.

**Dr. Ch.Ramreddy**, Adomian Decomposition Method & Its Modifications: Theory and Problems, Webinar Series – 2020 on Mathematical Modelling & Its Applications, Sastra (Deemed to be University), Thanjavur, Tamil Nadu, 12-10-2020.

**Dr. Satyanarayana Engu**, On a differential equation governing traffic flow problem, NIT Warangal, 31-12-2020.

**Dr. Satyanarayana Engu**, Conservation laws, NIT Tiruchirappalli, 18-06-2021.

**Dr. Y. Sreenivasa Rao**, Mathematics in Security, Dept. of Mathematics, SNS College of Technology, Coimbatore, Tamil Nadu, 22-06-2020.

**Dr. Kaladhar Kolla**, Single and Two Species Populations Models, Vignana's Institute of Management and Technology for Women, Hyderabad, 16-06-2020.

**Dr. Triveni Prasad Shukla**, Applications of Differential Equations in Engineering, Government Polytechnic, Dehri-on-Sone, Rohtas, 20-08-2020.

**Dr. Triveni Prasad Shukla**, Groups of Small Order and Their Properties, Netaji Subhashchandra Bose College, Nanded, Maharashtra, 31-07-2020.

**Dr. Srinivas Jangili**, Mathematical Modelling with Differential Equations, Telanagana Tribal Welfare Residential Degree College, Adilabad, 22-12-2020.

**Dr. Jagannath Roy**, DEMATEL and ISM methods and their applications, Calcutta Business School, Kolkata (Online 2 Week

Certificate Course on Multi-Criteria Decision Making (MCDM) Techniques & Applications), 27-08-2020.

**Dr. Jagannath Roy**, Fuzzy Set Theory and its application in real-life decision making, Indas Mahavidyalaya, Bankura, West Bengal (National Webinar on "Recent Advances in Mathematical Sciences and its Applications"), 16-09-2020.

**Dr. Jagannath Roy**, Multi-criteria decision-making techniques: Theory and applications, NITW (FDP entitled, "Machine Learning and Optimization for Uncertain Decision Making" conducted by Dept CSE & Continuing Education Centre), 07-03-2021.

### **Awards/ Recognitions/ Achievements**

**Prof. Debashis Dutta**, Recipient of the prestigious LIFETIME ACHIEVEMENT AWARD in the international scientist awards on Engineering, Science and Medicine on 21 & 22 May 2021, Chennai, India, Organized by VDGGOOD Professional Association.

**Prof. D. Srinivasacharya**, has recognized as top 2 % Scientist in Stanford University Ranking.

### **PhD Research guidance (Completed during the academic year)**

**G. Shiva Kumar Reddy** (Roll No. 701638), completed his Ph. D with title "Nonlinear Convection In Earth's Outer Core With Isotropic/Anisotropic Diffusivities" under the guidance of **Dr. Benerji Babu A**, February 2021.

**Irrinki Gnana Sudha** (Roll No. 701372), completed his Ph. D with title "Codes in Pomset Metric: Constructions and Properties" under the guidance of **Dr. R. S. Selvaraj**, June 2021.

### **Details of students joined in higher educational institutes**

**Muskan Bansal**, M.Sc., Joined Ph.D. program at Harish-Chandra Research Institute (HRI), Prayagraj, Allahabad, 2021.

**Pavan Raickwade**, M.Sc., Joined Ph.D. program at IIT Madras, 2021.

**Preeti Priya**, M.Sc., Joined Ph.D. program at NIT Warangal, 2021.

S.No.	Roll Number	Name of the student	Placement details	Higher studies (YES or NO) if YES give details
1	194909	Jugal Kishore	Physics wallah Plateform	
2	194914	Muskan Bansal	-	PhD at HRI
3	194918	Lavanya R	Fractal Analytics	
4	194951	Abhinav Kumar	Dgliger Consulting	
5	194952	Amisha Sharma	Thoughtworks	
6	194953	Anamika Ghosh	K12 Techno Services Pvt Ltd	
7	194954	Vivek Band	Evosys Global	
8	194955	Bhoopati	Quantiphi Analytics	
9	194957	Govind Kumar	Akridata	
10	194960	Kishlay Dwivedi	Tata Consultancy Services	
11	194965	Mo Shahaman	-	B.Ed. at LU
12	194966	muskan agrawal	Evosys Global	
13	194968	Prashant Bhardwaj	Decimal technology	
14	194969	Preeti Priya	-	PhD at NIT Warangal
15	194972	Pavan Raickwade	-	PhD at IIT Madras
16	194975	Shruti Singh	Sapiens	
17	194976	Subhadip Maiti	Sigmoid Analytics	
18	194977	Vinay Pratap Singh	Kagool	

### All India Ranks in GATE 2021

S. No.	Roll No.	Name of the Student	AIR in GATE 2021
1	194972	Pavan Rajaram Raickwade	36
2	194905	Chinmaya Kumar Mishra	278
3	194914	Muskan Bansal	696
4	194921	Sarthak Sharma	876
5	194969	Preethi Priya	1267
6	194903	Aishwarya Asawa	1684
7	194901	Ajay Kumar	2720

### Department Outreach Activities

**Prof. Ramana Murthy J V**, Member BOS, Siddhrtha Womens college, Vijayawada, 2019-till date.

**Prof. Kasi Viswanadham K N S**, Member BOS, JNTU, 2019-till date.

**Prof. Kasi Viswanadham K N S**, Member BOS, Andhra University, Visakhapatnam, 2019-till date.

**Prof. Kasi Viswanadham K N S**, Member BOS, NRI Institute of Technology, Vijayawada, 2019-till date.

**Prof. Debashis Dutta**, Member-BoS, Gitam University, Vizag, 2019-till date.

**Prof. Debashis Dutta**, Member-BoS, KLEF- Vijayawada, 2019-till date.

**Prof. Debashis Dutta**, Member-Bos, JNTU , Kakinada, 2019-till date.

**Prof. Srinivasacharya D**, Member of BOS, Anurag UIniversity, Hyderabad from July 2020

**Prof. Srinivasacharya D**, Member of BOS, Mallareddy UIniversity, Hyderabad from January 2021

**Prof. Srinivasacharya D**, Member BOS, Mallreddy Engineering College (Autonomous), Hyderabad from July 2021

**Prof. Srinivasacharya D**, Member BOS, JNTU, Hyderabad from September 2021

**Prof. Srinivasacharya D**, BoS for Chaitanya College (Deemed University), Hanamkonda from July 2020

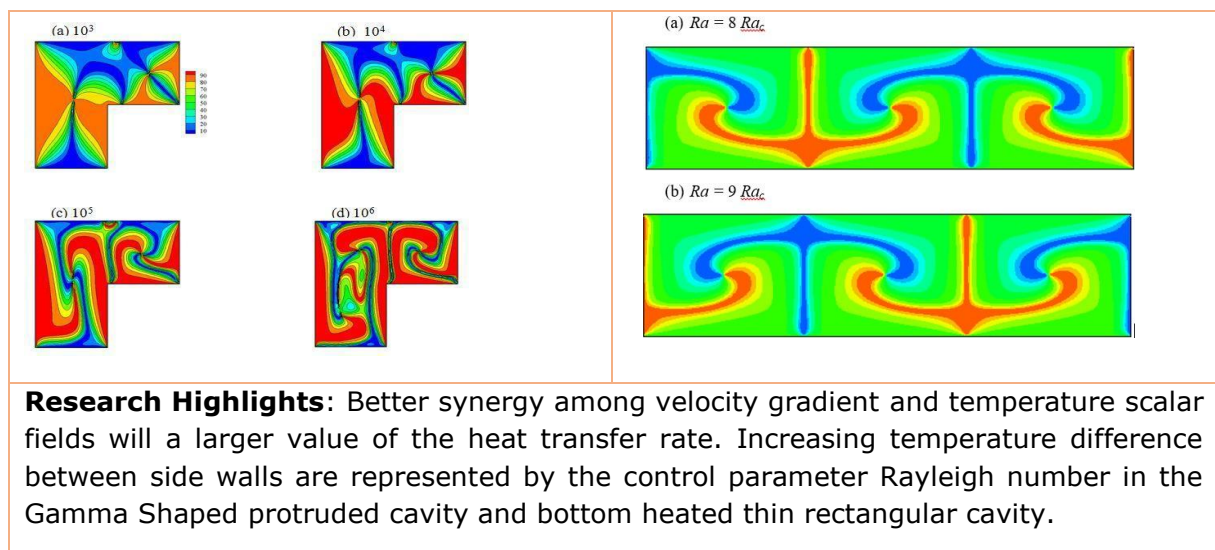
**Dr. P Muthu**, Member, Centre for Research, Development and Consultancy (CRDC)-Advisory Board, 2020.

**Dr. P Muthu**, Member, MEXT Scholarship Research Students screening Committee, Embassy of Japan, summer 2020.

**Dr. R. S. Selvaraj**, Member - BoS, Saveetha Engineering College, Chennai, 2019 - till date.

### Any other Department Specific

**Highlights of the department** (Research, state of art equipment, facilities, innovative practices etc. With photographs)





### Summary

S.No.	Activity	Number
<b>1</b>	<b>Publications (Peer Reviewed Journals/ conferences)(SCOPUS/SCI)</b>	
	International Journals	60
	National Journals	
	International Conferences	
	National Conferences	
<b>2</b>	<b>Funded Research Projects/SPARC projects (2019- 20)</b>	
	<b>Completed Projects (Rs. 28 Lakhs)</b>	<b>1</b>
	DBT, SERB(Rs. 28 Lakhs)	1
	<b>Ongoing Projects (Rs 38.30 Lakhs)</b>	<b>2</b>
	DST – FSER (Rs. 18.30 Lakhs)	1
	CSIR PROJECTS (Rs. 20 Lakhs)	1
	FIST PROJECT ()	
	BRICS project ()	
<b>3</b>	<b>SPARC Project Workshops</b>	
<b>4</b>	<b>Consultancy Works (2019-20)</b>	
<b>5</b>	<b>Patents</b>	
	Awarded	
	Filed	
<b>6</b>	<b>Books and Book Chapters</b>	
	Books	

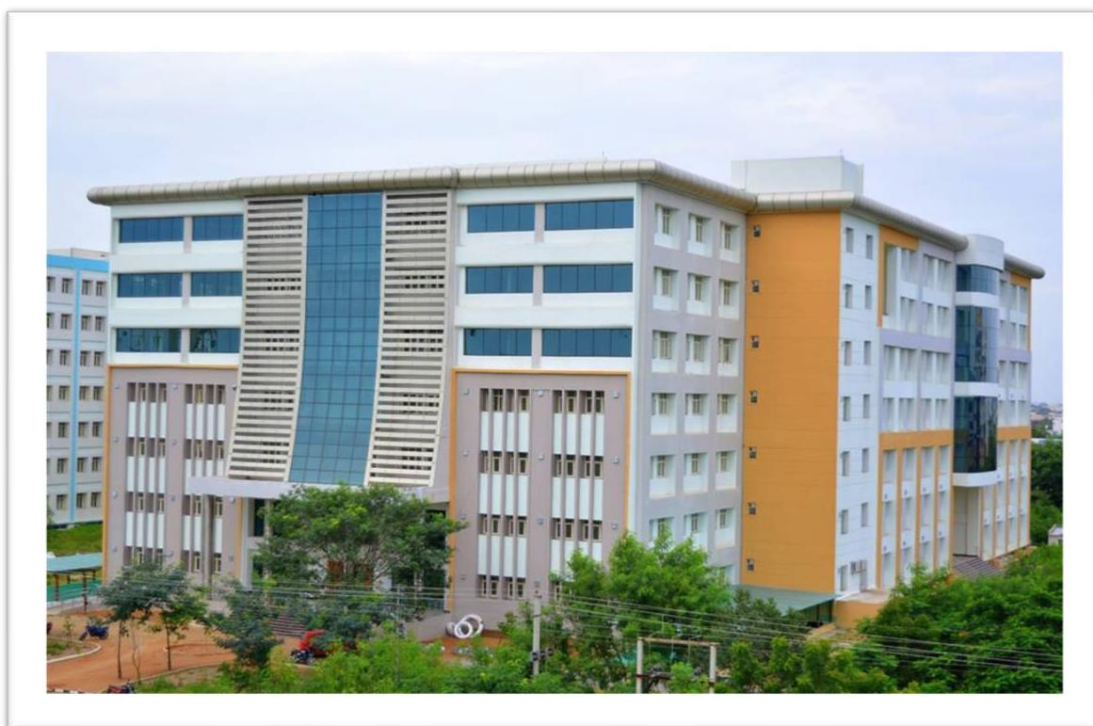
	Book Chapters	
<b>7</b>	<b>Conferences/ Workshops/GIAN courses/FDPs Conducted</b>	<b>2</b>
<b>8</b>	<b>Guest talks/ Webinars delivered</b>	<b>32</b>
<b>9</b>	<b>New Labs Established (Equipment/Software Procured)</b>	
<b>10</b>	<b>Awards/Recognitions/Achievements</b>	<b>2</b>
<b>11</b>	<b>Research Guidance (Completed in 2019-20)</b>	<b>2</b>
<b>12</b>	<b>International Visits of the Faculty Members/ students</b>	
<b>13</b>	<b>Students Achievements</b>	
	Placements	
	MSc	52 %
	Higher Education (M.Tech, PhD at IITs & Abroad)	15 %
	Lab Development Activities	
	Conference visits	
<b>14</b>	<b>Distinguished Guests visiting the Department/Delivering Expert Lecture/Keynote Address</b>	
<b>15</b>	<b>Outreach Programmes</b>	<b>15</b>
<b>16</b>	<b>Number of GIAN Courses Approved</b>	<b>2</b>
<b>17</b>	<b>Number of Faculty Chaired Conferences / Symposia Sessions</b>	<b>10</b>
<b>18</b>	<b>Number of Faculty participated in Faculty development/training activities/STTPs</b>	<b>8</b>
<b>19</b>	<b>Number of Memberships Possessed in Professional and S&amp;T Bodies</b>	<b>15</b>

## DEPARTMENT OF PHYSICS

### Brief History of the Department, Academic Programs

*The Department of Physics was established in 1959, along with the setting up of the Regional Engineering College Warangal (RECW), the first among the chain of REC s. The Department of Physics is involved in teaching UG and PG students of Engineering and Science Programs. The department has highly qualified, motivated and experienced faculty, who guide Ph. D scholars and execute research projects. The department offers a three year M.Sc. (Tech.) Engineering Physics program with specializations in Photonics, Electronics and Instrumentation. The department is actively engaged in research and has a number of sponsored R & D projects on hand. The areas of research include nanomaterials, glasses and biomaterials, magnetic materials, bio-polymers, photonics, electronics, biomedical instrumentation, transparent conducting oxides, liquid crystal displays, organic LED's and solar cells. The department has MoU's with reputed industries and R & D organizations like BEL, CSIO, ELOIRA, etc.*





*From the academic year 2021-2022, a 5- year Integrated MSc in Physics will be offered, with candidates admitted through JEE MAINS. This course is based on the NEP 2020 standards. The first three years of the curriculum are shared by the math, physics, and chemistry departments. The course's major goal is to develop competent science teachers, scientists, and researchers. There are two options for departure. One at the end of three years for B.ScEngineering Physics, and the other at the end of the fourth year for B.Sc honours.*



## Faculty Details:

S. No.	Name of the Faculty and Designation	Highest Qualification	Research Interests	Photograph
1	DINAKAR D. (HOD)	Ph.D.	Electronics and Photonic Sensors	
2	Dr. Ram Gopal Reddy L	Ph.D.	Medical Instrumentation & Super Capacitors	
3	Dr. Venugopal Reddy K	Ph.D.	Materials Science and Condensed Matter Physics	
4	DR. B.Sobha	Ph.D.	Sensors, Transducers, instrumentation aspects, materials for waste energy utilization applications	
5	Dr. Venkatappa Rao T	Ph.D.	Materials Science, Electronics Fibre optic sensors	
6	Dr. Abdul Azeem P	Ph.D.	Glass science, Bio Glass ceramics, Nanophosphors	
7	Dr. P. Syam Prasad P	Ph.D.	Glasses and glass-ceramics for electronic, optical and biomedical applications; Nanostructured magnetic and semiconductor materials	

<b>8</b>	Dr. Sourabh Roy	Ph.D.	Integrated Optics, Fiber Optics, Nonlinear optics, Photonic crystal waveguides and fibers	
<b>9</b>	Dr. Kuppusamy Thangaraju	Ph.D.	Organic semiconductors and devices: OLED's, Organic solar cells, Organic thin film transistors (OTFT's)	
<b>10</b>	Dr. Haranath D	Ph.D.	Photonic materials; Nanomaterials; Luminescence; Mesoporous materials; Sol-gel Technology	
<b>11</b>	Dr. Kusum Kumari	Ph.D.	Thin Films, Nanomaterials, Carbon Nanotubes, 2D materials, Organic Opto-electronic Devices	
<b>12</b>	Dr Paul Joseph	Ph.D.	Thin films, Magnetic nanomaterials, Spintronics, Solar cells, Electrochromism, & Super Conductivity	
<b>13</b>	Dr. V Jayalakshmi	Ph.D.	Liquid Crystals; Photo induced phase transitions; Microfluidics; Confinement & geometric effects, Soft matter	
<b>14</b>	Dr. R. Rakesh Kumar	Ph.D.	Energy Harvesting; Energy Storage; Nanogenerators; Nanomaterials; Nanowires growth; Sensors; Thin films; Gas sensors	
<b>15</b>	Dr. VIJAY KUMAR	Ph.D.	Singular Optics: Phase and polarization singularities, Optical angular momentum, Vector-vortex beams, structured light; Correlation optics, Nano-optics	

16	Dr. K Udaykumar	Ph.D.	Thin films, Transparent conducting oxides, Electrochromic devices, Energy storage and conservative materials and device	
17	Dr. Surya K. Ghosh	Ph.D.	Statistical Physics, Biophysics, Soft Matter, Computational Physics	
18	Dr Hitesh Borkar	Ph.D.	Ferroelectric Photovoltaics, High energy density capacitors, Electroceramics, Opto-electronic devices	
19	Dr. Aalu Boda	Ph.D.	Condensed Matter Theory, Low-dimensional Systems and Nanostructures (Quantum Dots), Spintronics, Density Functional Theory	

## Journal Publications

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- Zirconia-containing wollastonite ceramics derived from biowaste resources for bone tissue engineering P Srinath, PA Azeem, KV Reddy, V Penugurti, B Manavathi, *Biomedical Materials* 15 (5), 055025, 2020
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- Investigation of structural, optical, electrical and mechanical properties of transparent conducting 'Ag' electrodes, R Veera Babu, Jean Maria Fernandes, M Kovendhan, Nandarapu Purushothamreddy, Reddivari Muniramaiah, R Arockiakumar, NS Karthiselva, D Paul Joseph, *Physica B: Condensed Matter* 607, 412690, 2021
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- Investigation of ultra-thin and flexible Au-Ag-Au transparent conducting electrode Ch Surya Prakasarao, Pratim Hazarika, Slavia Deeksha DSouza, Jean Maria Fernandes, M Kovendhan, R Arockia Kumar, D Paul Joseph, *Current Applied Physics* 20 (10), 1118-1124, 2020
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Effect of Al<sup>3+</sup> ions substitution in novel zinc phosphate glasses on formation of HAp layer for bone graft applications MM Babu, PV Rao, N Veeraiah, PS Prasad, Colloids and Surfaces B: Biointerfaces 185, 110591, 2020

Development of novel fiber-optic temperature sensor using SrAl<sub>2</sub>O<sub>4</sub>: Eu<sup>2+</sup>, Dy<sup>3+</sup> nanophosphor ceramics, VV Jaiswal, D Haranath, Sensors and Actuators A: Physical, 113181, 2021

Phytochemical analysis of Moringa oleifera leaves extracts by GC-MS and free radical scavenging potency for industrial applications N Bhalla, N Ingle, SV Patri, D Haranath, Saudi Journal of Biological Sciences, 2021

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Multicolor emission and energy transfer dynamics in thermally stable Dy<sup>3+</sup>/Eu<sup>3+</sup> co-doped ZPBT glasses for epoxy free w-LEDs application K Jha, AK Vishwakarma, M Jayasimhadri, D Haranath, K Jang, Journal of Non-Crystalline Solids 553, 120516, 2021

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Fabrication and luminescent studies of near-spherical phosphor embedded epoxy-resin nanocomposite beads VVJD Haranath Journal of Inorganic and Organometallic Polymers and Materials, 2021

Synthesis and Characterization of Europium Doped Barium Magnesium Aluminate (BaMgAl<sub>10</sub>O<sub>17</sub>: Eu<sup>2+</sup>) and Lanthanum Yttrium Phosphate (LaYPO<sub>4</sub>: Eu<sup>2+</sup>) Nanophosphors D Haranath, J Chauhan, R Sahu, VR Mehto, 2021

Luminescence enhancement of high temperature hexagonal phase of Ba<sub>0.99</sub>MgAl<sub>10</sub>O<sub>17</sub>: Eu<sub>0.01</sub> nanophosphor synthesized at moderately low temperature DH Vishnu V. Jaiswal, P. Chandar Rao, C. J. Sreelatha, A. S. Sai Prasad, Materials Science and Engineering: B 263, 114791, 2021

Investigation on lanthanum sensitized CaZrO<sub>3</sub> blue nanophosphors for white LED applications. PA Azeem, B Evangeline, D Haranath, RP Rao, Luminescence: the Journal of Biological and Chemical Luminescence, 2020

A strong blue light-emitting material K<sub>2</sub>Ni(SO<sub>4</sub>)<sub>2</sub>·6H<sub>2</sub>O: Photoluminescence and magnetic properties M Narsimhulu, G Ramesh, D Haranath, Chemical Physics Letters 755, 137792, 2020

Efficient luminomagnetic and conductive Eu and Dy doped ZnO phosphors for multifunctional devices D Rehani, S Bishnoi, M Saxena, D Haranath, V Gupta, SN Sharma, Journal of Physics and Chemistry of Solids 143, 109460, 2020

Red emitting CaTiO<sub>3</sub>: Pr<sup>3+</sup> nanophosphors for rapid identification of high contrast latent fingerprints G Swati, D Bidwai, D Haranath, Nanotechnology 31 (36), 364007, 2020

Tb<sup>3+</sup> ion induced colour tunability in calcium aluminozincate phosphor for lighting and display devices S Kaur, AS Rao, M Jayasimhadri, VV Jaiswal, D Haranath, Journal of Alloys and Compounds 826, 154212, 2020

Unusual Red-Shift and Enhanced Photoluminescence of BaMgAl<sub>10</sub>O<sub>17</sub>: Eu<sup>2+</sup> Phosphor Under Ultraviolet A Excitation for Modern Lighting Systems, P Chandar Rao, Mohini Gupta, Vishnu V Jaiswal, G Ravinder, CJ Sreelatha, KA Hussain, G Vijaya Prakash, D Haranath, Journal of Nanoscience and Nanotechnology 20 (6), 3854-3858, 2020

Size-Selective ZnO Nanocrystals as Spectral Energy Converters for Use in Advanced Display Devices VV Jaiswal, D Haranath,

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Novel multi-wavelength excitable single-component phosphor system for application in white-LEDs Naina Lohia, Vishnu V Jaiswal, Swati Bishnoi, G Swati, SN Sharma, Manoj Mohapatra, D Haranath, Ceramics International 46 (4), 4079-4085, 2020

Luminescence properties of yttrium gadolinium orthovanadate nanophosphors and efficient energy transfer from VO<sub>4</sub><sup>3-</sup> to Sm<sup>3+</sup> via Gd<sup>3+</sup> ions VV Jaiswal, S Bishnoi, G Swati, P Singh, N Lohia, S Bathula, D Haranath, Arabian Journal of Chemistry 13 (1), 474-480, 2020

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The Emerging Role of HDACs: Pathology and Therapeutic Targets in Diabetes Mellitus, Saikat Dewanjee, Jayalakshmi Vallamkondu, Rajkumar Singh Kalra, Pratik Chakraborty, Moumita Gangopadhyay, Ranabir Sahu, Vijaykrishna Medala, Albin John, P Hemachandra Reddy, Vincenzo De Feo, Ramesh Kandimalla Cells 10 (6), 1340, 2021

Emerging COVID-19 Neurological Manifestations: Present Outlook and Potential Neurological Challenges in COVID-19 Pandemic, P Hemachandra Reddy Saikat Dewanjee, Jayalakshmi Vallamkondu, Rajkumar Singh Kalra, Nagaprasad Puvvada, Ramesh Kandimalla, Molecular Neurobiology, 2021

Autophagy in the diabetic heart: a potential pharmacotherapeutic target in diabetic cardiomyopathy S Dewanjee, J Vallamkondu, RS Kalra, A John, PH Reddy, R Kandimalla, Ageing Research Reviews, 101338, 2021

Mitochondrial dysfunction, mitophagy, and role of dynamin-related protein 1 in Alzheimer's disease, Vijay Krishna Medala, Buchaiah Gollapelli, Saikat Dewanjee, Gilbert Ogunmokun, Ramesh Kandimalla, Jayalakshmi Vallamkondu Journal of Neuroscience Research 99 (4), 1120-1135, 2021

SARS-CoV-2 pathophysiology and assessment of coronaviruses in CNS diseases with a focus on therapeutic targets J Vallamkondu, A John, WY Wani, SP Ramadevi, KK Jella, PH Reddy, ... , Biochimica et Biophysica Acta (BBA)-Molecular Basis of Disease 1866 (10), 165889, 2020

## Funded Research Projects

**FIST-PROJECT- Rs. 2.75 Cr** (XRD and FESEM equipment) "Fund for Improvement of S&T Infrastructure in Universities and Higher Educational Institutions (DST-FIST)" Scheme in January, 2020. The duration of the project is five years (2020 – 2025)

**Dr. T. V. Appa Rao**, received a grant of **Rs. 34.5** Lakhs to work on "Development of fully bio-based and biodegradable polymer and bamboo fibers composites for commercial applications. (2019)

**Dr. Abdul Azeem**, Rs. 43 lakhs "Development of novel bioactive glasses And glass ceramics- in vitro and in vivo" 2018-2021 Project

**Dr. Sourabh Roy**, received a grant of **Rs. 39.57** Lakhs from SERB to work on "Stable Generation of Optical Vortex Beams using Long Period Grating inscribed Few-Mode Optical Fiber. (May 2020)

**Dr. Surya K Gosh**, received a grant of **Rs. 37** Lakhs from Extreme Science and Engineering Discovery Environment (XSEDE), USA & Microsoft Azure, USA to work on "Computational structure-based drug design: Identifying antivirals from natural products targeting sars-cov-2 . (Biotechnology department, NIT Warangal) (August 2020)

**Dr. Surya K Gosh**, received a grant of **Rs. 17** Lakhs from SERB to work on "Dynamics in Complex Environments: from single particle to giant polymers ". ( December 2020)

**Dr. V. Jayalakshmi**, received a grant of **Rs. 37.4** Lakhs from DBT to work on "Design and Development of cost-effective Label-free detection of Alzheimer's biomarkers using liquid crystals". ( July 2021)

**Dr. V. Jayalakshmi**, received a grant of **Rs. 52.04** Lakhs from SERB-ECR to work on "Microfluidic methods for the synthesis of monodisperse nematic and cholesteric liquid crystal emulsions for The application in display and fiber optic technology" (Dec, 2016)

**Dr.Vijay** received a grant of Rs.18 Lakhs from SERB "Machine learning assisted structured light demultiplexing using nano structures" just few days back got it.(7<sup>th</sup> Noveber 2021)

S. No.	Title & PI	Total Amount sanctioned	Funding agency and Project No.	Installment 1 2018-2019	Installment 2 2019-2020	Installment 3 2020-2021
1	Fund for Improvement of S&T Infrastructure in Universities and Higher Educational Institutions (DST-FIST)" Scheme in January, 2020	Rs. 2.75 C				Rs. 180 L
2	Development of fully bio-based and biodegradable polymer and bamboo fibers composites for commercial applications. <b>Dr. T. V. Appa Rao</b>	Rs. 34.5 L	MD/MBDB/CR-86/18-19/589, Dt.22.04.2019		11,27,500/-	11,27,500/-
3	Development Of Novel Bioactive Glass And Glass Ceramics - In Vitro And In Vivo <b>Dr. P. Abdul Azeem</b>	37.76 Lakhs	DST-SERB, project No. EMR/2016/006870	8.08 Lakhs	5.00 Lakhs	8.00 Lakhs
4	Development of Distributed Photonic Sensor for Simultaneous and Real-time Measurements of Strain and Temperature in Fusion Reactor Relevant Applications <b>Dr. Sourabh Roy</b>	28,92,852/-	BRNS (DAE) & 39/14/27/2016-BRNS/34430	10,07,625/-	7,37,643/-	-
5	Stable generation of optical vortex beams using long period grating inscribed few mode optical fiber. <b>Dr. Sourabh Roy</b>	39,57,166/-	DST-SERB-CRG & CRG/2019/006569			22,98,704/-
6	Dynamics in Complex Environments: from single particle to giant polymers <b>Dr.Surya K. Ghosh</b>	INR: 14,36,392/-	SRG (DST-SERB) Projects No: SRG/2020/001606 Date: 26/11/2020	—	—	8,32,672/-
7	Computational structure-based drug designing	INR: ~ 37,00,0	Extreme Science and	—	37,00,000/-	—

	(As a co-PI) <b>PI: Dr. Thyageshwar</b> Chandran, Dept of Biotech, NIT-W <b>Dr.Surya K. Ghosh</b>	00/- (USD 50,000 )	Engineering Discovery Environmen t (XSEDE), USA & Microsoft Azure, USA			
<b>8</b>	Development of Highly Efficient Perovskite Solar Cells using Chemical Vapor Deposited Graphene and Graphene Nanocomposites as Electron Transport Layers <b>Dr. Kusum Kumari</b>		SERB-EEQ ( <b>EEQ/201 6/000723</b> )	Rs. 3,50,000/ -		
<b>9</b>	Interface Engineering with CVD grown MoS <sub>2</sub> Ultra – thin Layers for the Improvement of Perovskite Solar Cell Performance <b>Dr. Kusum Kumari</b>		<b>DST/TMD/ SERI/S56 /(C&amp;G)</b>	Rs. 7,50,000/-		
<b>10</b>	Microfluidic methods for the synthesis of monodisperse nematic and cholesteric liquid crystal emulsions for The application in display and fiber optic technology <b>Dr. V. Jayalakshmi</b>	Rs. 520410 0/-	ECR/2016/ 000559		Rs.6,50,00 0/-	<b>Rs.4,70,0 00/-</b>
<b>11</b>	Design and Development of cost-effective Label-free detection of Alzheimer’s biomarkers using liquid crystals <b>Dr. V. Jayalakshmi</b>	Rs. 374000 /-	<b>BT/PR358 41/MED/3 2/745/20 20</b>			<b>Rs. 3410000 /-</b>

### Books and Book Chapters

Fiber Optic Vibration Sensors Putha Kishore & Dantala Dinakar, Intech Open Access July 2021

Synthesis, Characterization & Applications of ZnO-TiO<sub>2</sub> Nanocomposites, D. Haranath. Rakesh Kumar, K. Uday Kumar, Nanoscale Compound Semiconductors and their Optoelectronics Applications 9, 44, 2021

### Conferences, workshops, FDPs, Webinars organized

Swami Mahamedhananda (Editor, Vedant Kesari Chennai, Chennai Ramakrishna Math, India), "Mind and it's control", 21/02/2021

### Patents (Filed, Published, Granted and Licensed)

**Dr. P. Abdul Azeem**, P. Srinath, **KVG Reddy**, S Rajkumar, Sushil Patel, Krishnam Raju and M Bramanandam for an invention entitled "Calcium Silicate Based Nano Crystalline Ceramics: A Costeffective Method For The Preparation Using Natural Resources" application number 201941036738 for the term of 20 years from the 12th day of September 2019 in accordance with the provisions of the Patents Act,1970, Patent No. : 376586, GRANTED OCTOBER 2021

Prof. Philip Russel, (Director, Max Planck Institute for the Science of Light, Germany), "Photonic Crystal fiber", 11/03/2021

Prof. Sile Nic Chormaic, (Okinawa Institute of Science and Technology (OIST), Japan), "Particle trapping and spectroscopy using ultrathin optical fibres and whispering gallery resonators" 09/04/2021

Prof. Elsa M. Garmi First PhD student of Prof. Charles Townes, the 1964 Nobel laureate and inventor of the laser, USA, "Old Fashioned Creativity: Chandrasekhara Venkata Raman, Charles Townes and you", 16/05/2021

### PhD Research guidance (Completed during the academic year)

**T. Ramesh** (Roll No. 714051) completed his Ph.D with the title "Development of novel porous carbons using agricultural biomass for high performance and cost-effective electrodes for supercapacitor application"

under the guidance of Prof. L Ram Gopal Reddy in October, 2021.

**Lalsingh Guguloth** (Roll No. 715084) completed his Ph.D. with the title "Studies on Photophysics and Charge Carrier Dynamics of Graphene Oxide and Ternary Blend based Polymer Solar Cells" under the guidance of Dr. Kusum Kumari in September, 2021.

**PALAKURTHY SRINATH** (Roll No. 716188) completed his Ph.D. with the title "Calcium silicate-based bioceramics derived from natural resources for bone tissue engineering" under the guidance of Prof. K. Venu Gopal Reddy and Dr. Abdul Azeem in September, 2021.

**Vishnu Vikesh Jaiswal** (Roll No. 718163) completed his Ph.D. with the title "Studies on multi-color emitting long afterglow phosphors for display, security and biological applications" under the guidance of Dr. Haranath in September 2021

### Best student papers and other achievements

Sl No.	Name	Achievement Details	Date
1.	Koustav Dey	Invited Speaker at 17 <sup>th</sup> International Conference on Optics, Laser and Photonics, Osaka, Japan.	26-28 <sup>th</sup> June, 2021
2.	Koustav Dey	IOP Trusted Reviewer Award (Given to the top 2% reviewer in the world from IOP)	27 <sup>th</sup> July, 2021

### Details of students joined in higher educational institutes

Roll No	Name	Project details	Placement details	Status
185901	Abhishek Pathak	IRDE, Deharadun   Kutleng Technology, SA	Kutleng Technology, SA (off campus)	Changed the company



185902	Anju Kumari	Varroc Lighting Systems	Varroc Lighting Systems (on campus)	Working
185903	Arabinda Luha	IRDE, Deharadun	Biotech Healthcare	Working
185904	Bikash Patel	IRDE, Deharadun	Ohhpro Junction	Working
185905	Deepak Kaloya	CSIR- CEERI, PILANI	Physics Faculty at coaching institute(off campus )	Working
185906	Deepanshu	MedEv Plus, Bangalore	MedEv Plus, Bangalore (on campus)	Working
185907	Harkirat Kaur	Optics and allied engineering pvt ltd, Bangalore	Optics and allied engineering pvt ltd, Bangalore (on campus)	Changed the company
185908	Indu Khichar	CSIR- CEERI, PILANI	NA	Studying
185909	Jogender Kumar	Optics and allied engineering pvt ltd, Bangalore	Optics and allied engineering pvt ltd, Bangalore (on campus)	Changed the company
185910	Karan	BEL, Macchilipatnam		Working
185911	Kavita Tiwari	CMET, Pune	Eruvaka Technologies Pvt Ltd (off campus)	Working
185912	Kirti Ranjan Das	IRDE, Deharadun	Prism India Pvt Limited	Working
185913	Priyanshi Rastogi	Elico Limited, Hyderabad	Evosys Private Limited (on campus)   Cadence (off campus)	Working at Cadence
185914	Kuntal Manjhi	BS SYSTEM PVT LTD	Own Startups : 1)Lalpalash , 2) Kargrill cafe	Entrepreneur
185915	Kushal Bhadra	Physics Department, NITW		
185916	Bishwanta	IRDE, Deharadun		Studying
185917	Manisha	Physics Department, NITW		Studying
185918	Hasnain	Nexys Instruments	Nexys Instruments (on campus)	Working
185919	Meena	Physics Department, NITW	Embibe (off campus)	Working
185920	Mohit Mittal	MedEv Plus, Bangalore	MedEv Plus, Bangalore (on campus)	Working
185921	Neha Gupta	Physics Department, NITW		Studying
185922	Nisha Yadav	BEL, Macchilipatnam	Mantra Optics (on campus)	Working
185923	Palak Kapoor	Varroc Lighting Systems	Varroc Lighting Systems (on campus)	Working
185924	Pandit Himangi	PRL, Ahmedabad		
185927	Prachi Mishra	RCI, Hyderabad		Studying
185928	Preeti Kumari	IRDE, Deharadun	Research Project at Eqoria	Research Project
185930	Riya Sharma	Physics Department, NITW		Studying
185931	Rohit Kumar	Trinity touch pvt. Ltd. Bangalore	Trinity touch pvt. Ltd. Bangalore	Working
185932	Samiksha Kharb	CMET, Pune		
185933	Sanjiv Kumar	RCI, Hyderabad		

185936	Soumya ranjan Sahoo	Elico Limited, Hyderabad	Truechip, Noida (on campus)	Working
185937	Sukanya	Physics Department, NITW	Higher Studies	PhD
185938	Suman Gora	Physics Department, NITW		Studying
185939	Vivek Sharma	IRDE, Deharadun	Akash Institute (in process, on campus)	Working at AKASH
185940	Yogesh Garg	RSD College,Punjab	Byju's (off campus)   Akash Institute (in process, on campus)	Working at AKASH

### **Department Association/Students Clubs Activities**

A Five-day webinar on "Applied Optics and Photonics (AOP)"-5-9<sup>th</sup> November, 2020 SPIE, NIT Warangal; Co-Ordinator: Dr. Sourabh Roy

## Summary

S. No.	Activity	Number
<b>1</b>	<b>Publications (Peer Reviewed Journals/ conferences)(SCOPUS/SCI)</b>	96
	International Journals	96
	International Conferences	
	National Conferences	5
<b>2</b>	<b>Funded Research Projects/SPARC projects (2020-21)</b>	5
	DBT, SERB, DRDO	6
	Ongoing Projects (Rs <b>3.9</b> Crores)	11
	BRNS	1
	FIST PROJECT (2.5 Cr)	1
	National Bamboo Mission	1
	DST, SERB, IITM, NHAI, CSIR	2
<b>3</b>	<b>PhD Awarded</b>	4
<b>4</b>	<b>Book Chapters</b>	2
<b>5</b>	<b>Patents</b>	1
	<b>Awarded</b>	1
	<b>Filed</b>	NIL

# DEPARTMENT OF CHEMISTRY

## Brief History of the Department, Academic Programs

### **Brief Profile:**

Having been established in the Year, 1959, as an integral part of the Regional Engineering College Warangal (RECW), the Department of Chemistry is greeted as one of the most academically active Departments in the Institute since inception. The department housed 17 faculty members, 49 research scholars and over 100 M.Sc. students. It offers Chemistry courses to all B.Tech. programmes and runs two M.Sc., Chemistry Programmes with specializations in Organic Chemistry and Analytical Chemistry. The Department has executed many sponsored research projects worth crores of rupees and has plenty of projects on hand to the tune of about Rs 15 crore. The department has been conducting cutting-edge research in contemporary topics of Organic, Inorganic, Physical and Analytical Chemistry. It has been publishing its research papers in journals of very high impact factor. So far, the department produced more than 135 Ph.D. students and published over 1000 research articles in various well-reputed international and national journals. In the department, various state-of-the-art facilities such as 400 MHz NMR, HRMS, gas chromatography, HPLC, FTIR, UV-vis-NIR, fluorescence, electrochemical workstation, computational chemistry software, etc. are available. As a part of continuing education and outreach activities, department organized national and international Conferences, seminars and workshops. In addition, many of the faculty also were known for their outreach activities and involvement science popularization. The department surpasses in teaching, research and graduate students' placement.

### **VISION**

*Towards Serving as a Potential Hub of Knowledge in Chemical Sciences and Allied Areas So as to Uphold and Strengthen the Vision of the Institute as One among Many Pillars While Striving Continuously in Pursuit of Excellence in Chemical Education, Chemical Research, Chemical Industry and All Interfaces of Chemistry with Society*

### **MISSION**

*Imparting Total Quality Education in Basic and Applied Chemistry to Develop Innovative, Entrepreneurial and Environment Friendly Graduates of Chemical Sciences of International Standards.*

*Offering Relevant Fundamental and Applied Attributes of Chemistry, the Central Science, to Engineering Students as an Integral Part of Technical Education.*

*Promoting Chemical Industry and Societal Service Sectors towards Environment-Friendly and Green Chemical Protocols by Innovation and Research in Cutting Edge Areas of Chemical and Allied Sciences*

*Augmenting the Country's Needs of Human Resources and Scientific Manpower in Basic and Advanced Chemistry through Learner-Centric and Atma Nirbhar Bharath Modern Education and Research.*

### **Areas of Research Interest:**

- *Organic Synthesis, Electrochemistry, Sensors, Energy Systems, Interfacial Chemistry; Medicinal Chemistry, Drug Discovery, Catalysis, Self-assembly, Materials Chemistry, Analytical Reagents and Chromatography, Coordination Chemistry, Environmental Chemistry, Bio-organic Chemistry, Carbohydrate Chemistry, Nano Materials, Supramolecular Chemistry, Computational Chemistry*

### **Courses Offered by Chemistry Department:**

**UG courses:** *Chemistry theory and laboratory to all engineering branches; Industrial Organic Chemistry Theory to ChE and Polymer Technology to MME.*

**5yr Integrated M.Sc. Program:** *Admission through JEE Mains with intake of 60 students. Math (20), Physics (20) and Chemistry (20). . For the first three year common syllabus is followed.*






**Postgraduate Programme:** The Department of Chemistry has been running two 2-Year (4-Semester) M.Sc Chemistry Programmes with specialization in Organic Chemistry and Analytical Chemistry with an intake of 30 in each stream. The admission to these programmes is based on Joint Admission Test for Masters (JAM), an all India examination administered and conducted jointly by the Indian Institute of Science and seven Indian Institutes of Technology on behalf of the National Coordination Board - GATE, Department of Higher Education, Ministry of Education conducted by IITs and IISERs.






**Doctoral (PhD) Programme:** All the faculty members of the Department of Chemistry offer research guidance to registered Scholars leading to the award of Ph.D., degree in all branches of Chemistry and in cutting-edge inter-disciplinary areas of chemistry.

- ✓ The Institute has both Full Time and External Ph.D., admissions. All the Full Time Research Scholars have financial assistance through either Institute Fellowships or Project Fellowships or own JRF/SRF Fellowships whereas the External (Part-Time) Ph.D., Scholars are those who work in National Laboratories or in reputed industrial R&D organizations.
- ✓ The Department has awarded more than 130 Ph.D., degrees so far and there are over 50 Ph.D., Scholars on rolls.







### Faculty Details:

S. No.	Name of the Faculty Member and Designation	Highest Qualification	Research Interests	Photograph
1	Dr. A. Ramachandraiah Ph.D. (Univ. of Hyderabad) Professor (HAG)	Ph.D	Coordination and Electrochemistry	
2	Dr. K. Laxma Reddy Ph.D. (Kakatiya Univ.) Professor (HAG)	Ph. D	Coordination and Environmental Chemistry	
3	Dr. V. Rajeswar Rao Ph.D. (Kakatiya Univ.) Professor (HAG)	Ph. D	Synthetic organic chemistry	
4	Dr. K. V. Gobi Ph.D. (Madurai Kamaraj Univ.), Professor	Ph. D	Electrochemical Biosensors, Fuel Cell Electro- catalysts	
5	Dr. P. V. Srilakshmi Ph.D. (IICT, Hyderabad), Professor	Ph. D	Bioorganic Chemistry, Drug Delivery/Gene Delivery	

6	Dr. Vishnu Shanker, Ph.D. (IIT Delhi), Associate Professor	Ph. D	Nanocomposite materials, Environmental remediation and photocatalysis	
7	Dr. D. Kashinath Ph.D. (IIT Bombay)	Ph. D	Organic synthesis, Medicinal chemistry	
8	Dr. Venkatathri Narayanan Ph.D. (NCL, Pune) Associate Professor	Ph. D	Materials chemistry and catalysis	
9	Dr. Raghu Chitta Ph.D. (Wichita State Univ), Assistant Professor	Ph. D	Materials Chemistry, Solar energy, Chemosensors	
10	Dr. B. Srinivas Ph.D. (Univ. of Hyderabad), Assistant Professor	Ph. D	Organic synthesis, Supramolecular chemistry, Crystal engineering	
11	Dr. K. Hari Prasad Ph.D. (IIT Kanpur), Assistant Professor	Ph. D	Organic synthesis, Carbohydrate Chemistry	
12	Dr. S. Nagarajan Ph.D. (Univ. of Madras), Assistant Professor	Ph. D	Organic synthesis, Organic materials, Molecular self-assembly	



13	Dr. M. Raghasudha, Ph.D. (Osmania Univ.) Assistant Professor	Ph. D	Nano-ferrites, Nanomaterials, Photocatalysis	
14	Dr. C. Jugun Prakash, Ph.D. (IIT Bombay), Assistant Professor	Ph. D	Medicinal inorganic and bio-analytical chemistry	
15	Dr. Ravinder Pawar, Ph.D. (CSIR-CLRI), Assistant Professor	Ph. D	Computational and theoretical chemistry	
16	Dr. Mukul Pradhan, Ph.D. (IIT Kharagpur), Assistant Professor	Ph. D	Nanomaterials, Energy devices, Electrochemical and SERS sensors	
17	Dr. G. Rajeshkhanna, Ph.D. (IIT Madras), Assistant Professor	Ph. D	Nanomaterials, Electrocatalysis, Electrochemical sensors	
18	Dr. V. Rajeshkumar, Ph.D. (National Chiao Tung Univ.), Assistant Professor	Ph. D	Organic synthesis, Metal catalysis	

## Journal Publications

S Mamidala, SR Peddi, RK Aravilli, PC Jilloju, V Manga, RR Vedula, Microwave irradiated one pot, three component synthesis of a new series of hybrid coumarin based thiazoles: Antibacterial evaluation and molecular docking studies, *Journal of Molecular Structure* 1225, 129114, 2021

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"Parameshwara Chary Jilloju, Mamidala Srikanth, Sthalam Vinay Kumar & Rajeswar Rao Vedula "One-Pot, Multi-Component Synthesis of Substituted 2-(6-Phenyl-7H-[1,2,4]Triazolo[3,4-b] [1,3,4]Thiadiazin-3-yl)-2,3 Dihydrophthalazine-1,4-Diones *Polycyclic Aromatic Compounds* 2020, Nakka Niveditha, a Munnisa Begum, a Duvvala Prathibha, a Kalam Sirisha, \*, a Porika Mahender, b Chandrashekar Chitra, c Vedula Rajeswar Rao, d Vanga Malla Reddy, e and Garlapati Achaiah "Design, Synthesis and Pharmacological Evaluation of Some C3 Heterocyclic-Substituted Ciprofloxacin Derivatives as Chimeric Antitubercular Agents, *Chem. Pharm. Bull.* 68, 1170-1177 (2020)

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Bhargava Sai Allaka, Srinivas Basavoju and Gamidi Rama Krishna A Green Catalyst Fe(OTs)<sub>3</sub>/SiO<sub>2</sub> for the Synthesis of 4-Pyrrolo-12-oxoquinazolines *ChemistrySelect* 5(46):14721-14728, <https://doi.org/10.1002/slct.202004012>

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R. Chedupaka, V. Papisetti, A.A. Sangolkar, R.R. Vedula, A Facile One-Pot Synthesis of Benzimidazole-Linked Pyrrole Structural Motifs via Multicomponent Approach: Design, Synthesis, and Molecular Docking Studies, *Polycycl. Aromat. Compd.* (2021) 1–15. <https://doi.org/10.1080/10406638.2021.1995010>.

K. Vaarla, V. Vishwapathi, K. Vermeire, R.R. Vedula, C. V. Kulkarni, A facile one pot multi component synthesis of alkyl 4-oxo-coumarinyl ethylidene hydrazono-thiazolidin-5-ylidene acetates and their antiviral activity,

J. Mol. Struct. 1249 (2021)  
<https://doi.org/10.1016/j.molstruc.2021.131662>.

### Funded Research Projects

Synthesis and Anticancer Activity of Sugar-Based Natural Saffloflavonesides and their Heterocyclic Analogs Dr. S. Nagarajan and Asim Bikas Das, No.CRG/2018/001386 dt 07-03-2019, 38.06 lakhs, DST-SERB, 3 years

Fabrication of Printable Nanosensor Patch for Direct Detection of Plant Diseases from Nanocellulose Based Polydiacetylene using Molecular Self-assembly, Dr. S. Nagarajan and C. Jugun Prakash, No. SPARC/2018 2019/P263/SL, dt 31-05-2019, 49.79 lakhs, MHRD-SPARC, 2 years

Hexabenzocoronene as a versatile Template for Integrating Panchromatic Photosensitizer-Cheap Metal Catalyst to a Single Platform: A Novel Class of Cost-Effective Catalysts for Efficient Photo-Driven Water Oxidation, Dr. Raghu Chitta, CRG/2018/002661 dated 09/03/2019, 44 lakhs, DST SERB CRG, 3 years

Heterocyclic-based Peptidomimetics for Non-viral Gene Delivery, P.V.SRILAKSHMI, CRG/2018/001049 dated 20/03/2019, 41.92 lakhs, SERB-DST, 3 years

Oxidative Photocyclization Strategy to Aromatic Extension of Corannulene D. V. Rajeshkumar INSPIRE Faculty Award - Offer letter[DST/INSPIRE/04/2016/000295]; date: 19 August, 2016, 35 lakhs, DST-INSPIRE, 5 years

Strategy for the synthesis of indole fused benzothiazepines and benzothiazines and explore their biological activity D. V. Rajeshkumar SRG/2020/001836; Dated: 06-11-2020 25 lakhs, DST-SERB, 2 years

Multidimensional Ultrafast Spectroscopy Dr. N. Sri Ram Gopal, Prof. D. Narayana Rao, Dr. Raghu Chitta UoH/IOE/RC1/RC1-20-011 55 lakhs Institute of Eminence 3 years

Novel Biocompatible Nanocomposites for SERS Based Sensing of Biomolecules and Toxic Metal Ions Dr. Mukul Pradhan DST/ INSPIRE Faculty Award /2016/DST/INSPIRE/04/2015/003227 35 lakhs DST-INSPIRE 5 years

"Development of Metal-OrganicFramework-Derived Hybrid Composite Materials as Bifunctional Electrodes for Production of H<sub>2</sub> by Water Electrolysis" Dr. Rajeshkhanna Gaddam SRG/2021/001028; Dated 02-November-2021 25 lakhs DST-SERB 2 years

Ravinder Pawar Metal Flatlands (Atomically Thin Two-Dimensional Metals): Designing, Properties and Applications, ECR/2018/002346 Dated 18.03.2019, 41.17 lakhs, DST-SERB

Kokatla, H.P., Rongalite/Molecular Oxygen: A mild, low cost and green reagent for oxidation of organic substrates under sunlight EEQ/2018/001257, 18.03.2019, 41.02 Lakhs  
 Kokatla, H.P., Novel glycosylation methods and their application to biologically important molecules, DST/INSPIRE/04/2014/002550, 07.01.2016, 35.0 Lakhs.

Ravinder Pawar, Designing of nanoreactors for carbon dioxide (CO<sub>2</sub>) conversion into useful chemicals, DST, EEQ/2019/000656 Dated 19.12.2019 3 years

Mentoring and Hand-Holding of School Education System in Northern Telangana, Prof. A. Ramachandraiah and Prof. Laxma Reddy (Co-Coordinator), RAA-SCERT Project, 27 lakhs

Science Communication, Popularization and Extension project 93 lakhs, DST-Vigyan Prasar

DST FIST, Chemistry department, 1.67 crore, DST

S. No.	Title	Total Amount sanctioned (lakhs)	Funding agency and Project No.	Installment 1, 2018-2019 lakhs	Installment 2, 2019-2020 lakhs	Installment 3, 2020-2021 lakhs
1	Synthesis and	38.06	DST-SERB,	18.30	10.00	9.00

	Anticancer Activity of Sugar-Based Natural Saffloflavones and their Heterocyclic Analogs		No.CRG/2018/001386			
2	Fabrication of Printable Nanosensor Patch for Direct Detection of Plant Diseases from Nanocellulose Based Polydiacetylene using Molecular Self-assembly	49.79	MHRD, SPARC, No. SPARC/2018-2019/P263/SL	2.0	-	-
3	Hexabenzocoronene as a versatile Template for Integrating Panchromatic Photosensitizer -Cheap Metal Catalyst to a Single Platform: A Novel Class of Cost-Effective Catalysts for Efficient Photo-Driven Water Oxidation	44.00	DST-SERB, No.CRG/2018/002661	25.04	10.0	7.50
4	Heterocyclic-based Peptidomimetics for Non-viral Gene Delivery	41.92	DST-SERB, No.CRG/2018/001049			
5	Oxidative Photocyclization Strategy to Aromatic Extension of Corannulene	35	DST, DST/INSPIRE/04/2016/000295	-	10.21	-
6	Strategy for the synthesis of indole fused benzothiazepines and benzothiazines and explore	25	DST-SERB, SRG/2020/001836	-	16.56	

	their biological activities					
7	Multidimensional Ultrafast Spectroscopy	55	UoH/IoE/RC1/RC1-20-011	-	1.0	1.0
8	Novel Biocompatible Nanocomposites for SERS Based Sensing of Biomolecules and Toxic Metal Ions	35	DST/ INSPIRE Faculty Award /2016/DST/INSPIRE/04/2015 /003227			
9	"Development of Metal-Organic Framework-Derived Hybrid Composite Materials as Bifunctional Electrodes for Production of H <sub>2</sub> by Water Electrolysis"	25	DST-SERB SRG/2021/001028; Dated 02-November-2021			
10	Metal Flatlands (Atomically Thin Two-Dimensional Metals): Designing, Properties and Applications	41.17	DST-SERB ECR/2018/002346 Dated 18.03.2019			
11	Rongalite/Molecular Oxygen: A mild, low cost and green reagent for oxidation of organic substrates under sunlight	41.02	DST-SERB, EEQ/2018/001257, 18.03.2019	27.25	8.0	8.0
12	Novel glycosylation methods and their application to biologically important molecules	35	DST, DST/INSPIRE/04/2014/002550	7.0	7.0	-
13	Designing of nanoreactors for carbon		DST, EEQ/2019/000656 Dated 19.12.2019			

	dioxide (CO <sub>2</sub> ) conversion into useful chemicals					
14	Mentoring and Hand-Holding of School Education System in Northern Telangana	27	RAA-SCERT Project			
15	Science Communication , Popularization and Extension project	93	DST-Vigyan Prasar			
16	DST - FIST	167	DST	-	155	-

### Patents (Filed, Published, Granted and Licensed)

Patent Details: File No. 2021106376: PROCESS FOR PREPARING FARNESOL-BASED CATIONIC LIPIDS FOR CARRYING NUCLEIC ACIDS INTO DESIRED CELL LINES. 2021, Asian Patent

M. Pradhan, S. Rudra, R. Chakraborty File No. 202141054738 Synthesis of Graphitized Carbon from Biomass using Focused Sunlight in a Newly Designed Reaction Setup for Energy Storage Application, 2021

### Books and Book Chapters

Rebeka Vara Prasad, Rachamalla Arun Kumar, Devendra Sharma, Atul Sharma, Subbiah Nagarajan,\* Chapter 21 - Sophorolipids and rhamnolipids as a biosurfactant: Synthesis and applications, Editor(s): Inamuddin, Charles Oluwaseun Adetunji, Abdullah M. Asiri, Green Sustainable Process for Chemical and Environmental Engineering and Science,

Saikumar Manchala, Vijayakumar Elayappan, Hai-Gun Lee, Vishnu Shanker\* Chapter-7 Plasmonic photocatalysis: an extraordinary way to harvest visible light, Editor(s): Mohan Sakar, R. Geetha Balakrishna and Trong-On Do, Photocatalytic Systems by Design Materials, Mechanisms and Applications, Elsevier, 2021, Pages 187-216

K Koteswara Reddy, K Yugender Goud, M Satyanarayana, Shekher Kummari, V Sunil Kumar, Harshad Bandal, Tippabattini Jayaramudu, Radha Devi Pyarasani, Hern

Kim, John Amalraj, K Vengatajalabathy Gobi,\* Chapter-4 "Metal oxide-metal nanocomposite-modified electrochemical sensors for toxic chemicals" pp. 79-137 in Metal Oxides in Nanocomposite-Based Electrochemical Sensors for Toxic Chemicals, Eds. A. Pandikumar, P. Rameshkumar, 2021, Elsevier.

Siva Prasad Y., Lalitha K., Sravya Chowdary A., Jugun Prakash C., Nagarajan S\*, (2021) Metals and Metal Complexes for Medicinal Applications (Chapter 3), S. Rajendran et al. (eds.), Metal, Metal Oxides and Metal Sulphides for Biomedical Applications, Environmental Chemistry for a Sustainable World 58, Springer, Cham

Siva Prasad Y., Lalitha K., Thamizhanban A., Atul S., Muskan B., Nagarajan S\*, (2021) Application of Metal and Metal Oxides in Sustainable Synthesis and Biology (chapter 9), S. Rajendran et al. (eds.), Metal, Metal Oxides and Metal Sulphides for Biomedical Applications, Environmental Chemistry for a Sustainable World 58, Springer, Cham

## Conferences, workshops, FDPs, Webinars organized

A Four-Day Faculty Training Program on Learning Management System with MOODLE, 14-07-2020 to 17-07-2020, For the Faculty of NIT Warangal (104) MHRD under PMMMNMTT Scheme, Organizers: Prof. VT. Somasekhar, Prof. A. Ramachandraiah

A Four-Day Faculty Training Program on Learning Management System with MOODLE, 21-07-2020 to 24-07-2020, For the Faculty of NIT Warangal (104), MHRD under PMMMNMTT Scheme, Organizers: Prof. VT. Somasekhar, Prof. A. Ramachandraiah

A Four-Day Faculty Training Program on Learning Management System with MOODLE, 27-07-2020 to 31-07-2020, For the Faculty of NIT Warangal (102), MHRD under PMMMNMTT Scheme, Organizers: Prof. VT. Somasekhar, Prof. A. Ramachandraiah

A Six-Day FDP on Content Preparation and Delivery for Online Mode of Teaching, 05-10-2020 to 10-10-2020, For the Faculty of Higher Education (35), MHRD under PMMMNMTT Scheme, Organizers: Dr. Thyageshwar C, Dr. T. Naresh, Dr. M. Satish, Prof. A. Ramachandraiah

A Five-Day FDP on Modern Digital Library Science and Technologies for Teaching, Learning and Research, 04-01-2021 to 08-01-2021, For the Faculty of Higher Education (93) MHRD under PMMMNMTT Scheme, Organizers: Dr. K. Veeranjanyulu, Prof. A. Ramachandraiah

A Six-Day FDP on Teaching and Learning of NMR Spectroscopy for Structure Determination, 19-02-2021 to 24-02-2021, For the Faculty of Higher Education (86), MHRD under PMMMNMTT Scheme, Organizers: "Dr. Srinivas B, Dr. Hari Prasad K, Prof. K. Laxma Reddy"

A Six-Day FDP on Teaching and Learning of Green Chemistry: Nurturing a New Generation of Chemists, 26-02-2020 to 03-03-2021, For the Faculty of Higher Education (62), MHRD under PMMMNMTT Scheme, Organizers: "Dr. Hari Prasad K, Dr. Srinivas B, Dr. A. Ramachandraiah"

A Six-Day FDP on Applications of DFT (DENSITY FUNCTIONAL THEORY) in Teaching and Learning Chemistry, Physics & Material Science - With Software for Chemistry and Materials (SCM-AMS), 19-03-2021 to 24-03-2021, For the Faculty of Higher Education (53), MHRD under PMMMNMTT Scheme, "Dr. M. Raghasudha, Dr. Ravinder Pawar, Prof. A. Ramachandraiah"

"A Six-Day Online Faculty Development Program on "EFFECTIVE TEACHING AND LEARNING OF MODERN DRUG DISCOVERY APPROACHES" ", 4th March, 2021 to 9th March, 2021, MHRD under PMMMNMTT Scheme, Organizers: Dr. D. Kahinath and Dr. V. Rajesh Kumar

**The Department of Chemistry organized an a Three-Day International Conference on "Conventional and Digital Methods in Chemical Education (CDMCE-2021)" during 29th - 31st July, 2021, on the eve of the retirement and in the honour of a senior chemistry faculty, Prof. A. Ramachandraiah, who is retiring after 36 years of service on 31.07.2021.G**

## Guest Talks/webinars delivered

Prof. K. Laxma Reddy delivered an expert lecture on "Environmental Issues and Challenges" on 8-8-2021 by online: Organized by Social Welfare Govt Degree College for Women, Khammam.

Prof. K. Laxma Reddy delivered an expert lecture on "Universal Human Values" through SCoPE Project to Degree College students and Faculty on 26-8-2021 by online

Prof. K. Laxma Reddy delivered an expert Lecture on "Group Theory-Applications" on 2-9-2021 by online: Organized by Free Coaching Camp, Kakatiya Degree College, Hanamkonda.

Prof. K. Laxma Reddy delivered an expert lecture on "Chemistry- in Our Daily Life" on 3-9-2021 through SCoPE project to students and teachers of Jangaon District by online

Prof. K. Laxma Reddy delivered an expert lecture on "Science and Society" on 5-9-2021 by online. Organized by Navodaya Residential School, Mamaunur, Hanamkonda District



Prof. K. Laxma Reddy delivered an expert lecture on "Ozone Layer-Depletion: Consequences and Remedies" on 16-9-2021 by online: Organized by JVV, Kazipet Mandal Committee

Prof. K. Laxma Reddy delivered an expert lecture on "Environmental Issues and SCoPE project Activities" on 19-9-2021 at Vagdevi College, Hanamkonda: Organized by JVV, Hanamkonda District

Prof. K. Laxma Reddy delivered an expert lecture on "Chemistry-A Inseparable Bond in Our Life" on 25-9-2021 through SCoPE project to students and teachers of ZPHS, Kamareddygudem and ZPHS, Dharmapuram, Jangaon District by online

Prof. V. Rajeswar Rao delivered a lecture on ( 28-9-21 ) Advanced Synthetic Methods in Organic Chemistry in the Faculty development Programme on "COMPUTATIONAL TECHNIQUES IN CHEMICAL ANALYSIS AND QUANTITATIVE BIOLOGY" during 20-09-2021 to 29-09-2021. Organised by E & ICT Academy, NIT Warangal in association with IQAC, Vaagdevi Degree & PG College, Hanamakonda, Telangana.

Prof. V. Rajeswar Rao delivered a lecture on (6-9-21) Synthesis of Organic molecules :Planning and Execution in the "One week short term course on modern methods in Organic synthesis and Analytical Techniques" during 30-9-21 to 6.9.21 .Organized by JNTU ,Hyderabad.

Prof. V. Rajeswar Rao delivered a lecture on (26-7-21) Recent Advances in MCRs Chemistry in the ICQR international webinar on Advances in Chemistry organized by Govt. Gajanand Agarwal P.G.College Bhatapara(C.G).

Prof. V. Rajeswar Rao delivered a lecture on MCRs as tools for Drug Discovery( 18-3-21)in a two day International Conference Emerging Trends in Medicinal Chemistry (ETMC -2021) during 18 to 19 March 2021 Organized by SVNIT, Surat.

Prof. V. Rajeswar Rao delivered a lecture on Organic Synthesis (28-1-21) in a two day

National Conference on "Advances in Chemistry and Chemical Engineering (NCACACE-21) during 28-29-2021" organized by JNTUHyderabad.

Prof. P. V. Srilakshmi delivered an expert lecture in International Conference on "Current Trends in Advanced Chemistry" (CTAC-2021). Topic "Tocopherol Based Cationic Lipids for Non-viral Gene Delivery" on 21.09.2021 organized by the Department of Chemistry, Saranathan College of Engineering, Tiruchirappalli-620012, Tamil Nadu, India during September 20th to 21st 2021.

Dr. S. Nagarajan served as a resource person in the One week Online Faculty Development Programme on "Green Technology and Sustainable Engineering in Chemistry" and delivered a talk on "Green Technology in Chemical Synthesis" on 06.08.2021 organized by the Department of Chemistry, Adhiyamaan College of Engineering, Hosur, Tamil Nadu from 02.08.2021 to 06.08.2021.

Dr. Raghu Chittadelivered an expert lecture on "Organometallic Chemistry of Transition Metals" at Kakaraparti Bhavanarayana College, Vijayawada on 04/09/2021.

Dr. Vishnu Shanker delivered a lecture on Nanomaterials: Synthesis and Applications in the Faculty Development Programme on "Computational Techniques in Chemical Analysis and Quantitative Biology" during 20-09-2021 TO 29-09-2021 Organised by E & ICT Academy, NIT Warangal in association with IQAC, Vaagdevi Degree & PG College, Hanamakonda, Telangana.

Dr. K. Hari Prasaddelivered an expert lecture at the FDP on Advances in Synthetic Organic Chemistry and their Applications in Medicinal Chemistry during 23rd- 27th August 2021, organized by the Department of Chemistry, NIT Calicut.

Dr. D. Kashinath delivered an invited lecture on "Organic Chemist's perception to Modern Drug Discovery Process" in a Five Days Faculty Development Program on Advances in Synthetic Organic Chemistry and Their Applications in Modern Medicinal Chemistry

conducted by the Department of Chemistry, NIT Calicut during 23rd– 27th August 2021

Dr. D. Kashinath delivered an invited lecture on “Modern Approaches for Improving Bioavailability of Drugs” in a National Seminar on Insoluble Drugs: Drug Delivery Challenges and Advances in Bioavailability Enhancement Techniques St. Peter’s Institute of Pharmaceutical Sciences, Vidya Nagar, Hanamkonda (Dist), TS on August 17, 2021

Dr. D. Kashinath delivered an invited lecture on “Synthesis of 3-hydroxy-2-oxindole-pyridine and bis-indolyl-2-oxindoles via sp<sup>3</sup> C-H functionalization, alkynylation and Friedel-Crafts reactions using Iron and Copper-based nanoparticles” in 4th National Conference in Chemistry (NConC-2021), Discipline of Chemistry, IIT Gandhinagar, 6-7 Aug 2021

Dr. D. Kashinath delivered an invited lecture on “Organo Copper and Magnesium Reagents” in an outreach activity of the Department of Chemistry, Khalsa College, Mumbai University on 21st April 2021

Dr. D. Kashinath and Dr. Raghu Chitta (As conveners) organized a 3 days International Conference on “Conventional and Digital Methods of Chemical Education” during 29-31 July 2021

Prof. K. V. Gobi delivered an Invited Lecture on “Versatile Nanocomposite Materials for Biosensors and Fuel Cells” in the Faculty Development Programme on “Multifunctional Materials and their Applications (MFMA)” organized by the Department of Chemistry, Mepco Schlenk Engineering College, Virudhunagar, Tamilnadu from 20-24 Sept 2021.

Dr N. Venkatathri, delivered an Invited Lecture on Development of Selected Multi-Valent Metal ions functionalized Mesoporous Materials and their Applications in a National Webinar organized by Vel Tech High Tech Dr. Rangarajan Dr. Sakunthala Engineering College, Chennai, 02-07-2020.

Dr. Kashinath and Dr. B. Srinivas have delivered Webinar talks from the aegis of SCoPE.

Prof. K. Laxma Reddy, Invited Lecture on “Environmental Issues and Challenges” delivered at Government Degree, and PG College for Women, Karimnagar on 17-4-2021

Dr S. Nagarajan delivered a Guest address in 2nd National Conference on Future Perspective for Basic Sciences, NCFPBS-21 organized by the Department of Chemistry, VINAYAKA MISSION'S RESEARCH FOUNDATION, Chennai, Tamil Nadu on 08-4-2021

Participated as a sExpert Member for 3 Engg Colleges. (a. GVP College of Engg. Vishakhapatnam, on 30-12-2020; b. GP College of Engg., Kurnool on 3-1-2021 and c. NSRITechnology, Sontyam, AP on 9-3-2021)

Delivered about Lectures each on, 'Professional Ethics', 'Computer Animations and Virtual Experiments' in all 15 different FDps conducted by various Departments in association with TLC

Delivered Lectures on 'Quantum Chemistry Fundamentals' and 'Elements of NMR Spectroscopy' on FDPs conducted recently by the Dept of Chemistry

Delivered Invited Lecture on, 'High Capacitors and Other Electrochemical Energy Storage Devices' on 22-2-2021 on the 2-Day National Conference on 'Sustainable Technology & Development; Environmental Impact' held at KL University, Guntur, held during 22nd -23rd Feb., 2021

Delivered Keynote on 'Women in Science a Lopsided Empowerment' on 8th March, 2021 conducted by Future Teachers, Hyderabad

Expert Member for the AICTE Evaluation and Verification Committee Meetings (8 in total, held during October, 2020 and January, 2021; Details not shared due to Confidentiality) organised by the AICTE West Region, Mumbai, AICTE South West Region, Banagaluru)

Phone in Interviews on matters of Science and ISRO's Space Programmes on TV Channels on National Science Day, 28th Feb., 2021

Served as Chairman, Institute Level Working Group on Teaching Learning and Resource

Working Group, constituted by the Director; Delivering a 1-Hour Report on the Strategies from the Committee.

Dr. D. Kashinath, Associate Professor, Department of Chemistry delivered an invited talk on "Synthesis of heterocyclic molecules using Bismuth, Iron, Copper, Zinc and based nanoparticles as recyclable heterogeneous catalysts in aqueous medium" in the Two Days Virtual International Conference on "Molecules to Materials" (MTM - 2020) organized by the Department of Chemistry, SVNIT Surat, during December 17-18, 2020

Dr. D. Kashinath, Associate Professor, Department of Chemistry delivered an invited talk on "Green and Sustainable Chemistry" in the Two Days Virtual International Seminar on "Sustainable Chemistry for Future" organized by the Department of Chemistry, TP College, Madhepura, BNMU-Darshan Parishad, Bihar, during September 9-10, 2020

Dr. Srinivas Basavoju, delivered an expert lecture on "Multidimensional NMR Spectroscopy and its Software Applications", UGC Sponsored National Conference on Multidimensional NMR Spectroscopy and its Applications, Organized by Acharya Nagarjuna University, College of Pharmaceutical Sciences, Guntur District, Andhra Pradesh, held on 17th & 18th March 2020

K. Laxma Reddy, "Symmetry & Group Theory and its Applications" at FDP on "Teaching Physical Chemistry with Hands on Experience" on 20-2-2020, organized by Department of Chemistry, NITW

K. Laxma Reddy, "Environmental Issues and Challenges" at FDP on "Teaching Organic Chemistry with Hands on Experience" on 24-2-2020, organized by Department of Chemistry, NITW

K. Laxma Reddy, "Electronic Spectroscopy" at FDP on "Instrumental Strategies of Physical Methods on Chemical Analysis with Hands on Experiments" on 2-3-2020, organized by Department of Chemistry, NITW

K. Laxma Reddy, "Symmetry & Group Theory and its Applications" at FDP on "Instrumental

Strategies of Physical Methods on Chemical Analysis with Hands on Experiments" on 3-3-2020, organized by Department of Chemistry, NITW

K. Laxma Reddy, Expert Lecture on "Symmetry & Group Theory and its Applications" at Department of Chemistry, PG centre, Adikavi Nannaiah University, Tadepelligudem, AP on 1-2-2020

K. Laxma Reddy, Expert Lecture on "Electronic Spectra of Metal Complexes" at Department of Chemistry, GITAM University, Vishakapatnam on 10-2-2020

V. Rajeswar Rao, Chemistry of Medicinally Important Thiazolidinones Satavahana University, Karimnagar Delivered a Lecture on 26/02/2020

V. Rajeswar Rao, Organic Reaction Mechanism JNTU Hyderabad 5-12-2020.

V. Rajeswar Rao, Recent Developments of Multi-Component Reactions NIT Warangal 23 and 24 February 2020

S. Nagarajan, Soft materials by self-assembly, Faculty Development Programme on MATERIALS SCIENCE & NANOTECHNOLOGY" organized by Department of Chemistry, B.S. Abdur Rahman Crescent Institute of Science and Technology, Chennai-48, on 16/08/2020.

S. Nagarajan, Soft materials by self-assembly, One week Online Faculty Development Programme on "Recent Avenues in Chemical Sciences" organized by the Department of Chemistry, Saranathan College of Engineering, Trichy from 22.06.2020 to 28.06.2020.

S. Nagarajan, Assembled advanced organic materials, Webinar on Advanced organic materials organized by PG and Research Department of Chemistry, National College, Trichy, Tamil Nadu, India on 03/06/2020

S. Nagarajan, Molecular Self-Assembly: An Elegant Strategy to Construct Advanced Organic Materials, Webinar on Molecular Self-Assembly: An Elegant Strategy to Construct Advanced Organic Materials organized by Department of Chemistry, Easwari

Engineering College, Chennai, Tamil Nadu, India on 02/06/2020

Raghu Chitta, Invited Lecture on "Photophysics of Electron and Energy Transfer in Artificial Photosynthetic Systems" at One-Week Online Faculty Development Programme on "Spectroscopic and Analytical Techniques: Applications" on 29th May, 2020 at J.C.Bose University.

Raghu Chitta, Invited Lecture on 'Atomic Spectroscopy' at A National Webinar on Lecture Series on Spectral Techniques on 4th July, 2020 at Palamuru University

Vishnu Shanker, delivered a lecture in Six Day Faculty Development Workshop on "Teaching and Learning Nanoscience and Technology through Hands-on-experiences" (TLNST – 2020) is organized by Department of Chemistry, NIT Warangal In association with Teaching Learning Centre, NIT Warangal as a part of Diamond Jubilee Celebrations of NIT (REC), Warangal during 10th-15th February 2020.

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M. Raghasudha, delivered a lecture through online on "Pollution during Diwali-Need for Green Diwali" on 31st October 2021 organised

by JVV, Hanamkonda district, Environment sub committee

M. Raghasudha, delivered a lecture through online on "Women Empowerment" through SCoPE project of NITW to Government Women's degree college Kareemnagar on 16th November 2021

M. Raghasudha, delivered a lecture through online on "Women and their Emancipation" through SCoPE project of NITW to Padmavati Women's degree college Warangal on 8th December 2021

M. Raghasudha, delivered a lecture on "Violence against Adolescent Girls" organised by JVV Hanamkonda Samatha sub-committee to KGBV girl students at Dharmasagar on 9th December 2021

Dr. K. Hari Prasad delivered an expert lecture at the FDP on Applications of DFT (Density Functional Theory) In Teaching and Learning Chemistry, Physics And Material Science – With Software For Chemistry And Materials (SCM-AMS) during 19 th – 24 th March 2021, organized by the Department of Chemistry, NIT Warangal.

### **New lab established/ Equipment and Software procured**

Dr. K. Hari Prasad, NMR instrument, MAS III solid state pneumatic control AH1220- Budget: Rs. 18,79,264, 2020

Dr. K. Hari Prasad, NMR instrument, 4mm solid state probe- Budget: Rs 36,13,179/- 2020

### **Awards/ Recognitions/ Achievements**

**Dr S, Nagarajan** has been selected as a member in the Indian National Young Academy of Sciences (INAYAS), INSA, Govt. of India for a period of 5 years beginning February 2021 to 2025

**Prof. K. V. Gobi** participated as External Academic Audit Committee member for the Academic courses of the Department of Applied Chemistry, Karunya Institute of Technology and Sciences, Coimbatore, Tamilnadu

**Dr. D. Kashinath** and **Dr. Ms. Raghasudha** are inducted as Members of the Core Committee of DST-VP-SCoPE Core Committee with Pof. K. Laxma Reddy as its Convener

**Dr. N. Venkatathri**, Board of Studies Member, Balaji Institute of Technology and Science (Autonomous), Warangal.

### PhD Research guidance (Completed during the academic year)

M. Srikanth, supervisor: Prof. Prof. V. Rajeswar Rao, Title: Synthesis of new nitrogen and sulfur heterocyclic compounds using multi component approach and studies on their biological activity

J. Parameswara chary, supervisor: Prof. V. Rajeswar Rao, Title: MCR Approach for the synthesis of new heterocyclic compounds from 4 amino 5- hydrazynyl-4H-1,2,4, triazole-3-thiol.

V. Sunil Kumar, supervisor: Prof. K. V. Gobi Title: Development of Palladium and Non-noble Metal Based Nanocomposite Electrocatalysts Toward Methanol Oxidation in DMFC Applications

S. Manasa, supervisor: Prof. K. V. Gobi, and Dr R. Subasri, Title: NANOCLAY-BASED SELF-HEALING CORROSION PROTECTION COATINGS ON ALUMINUM ALLOYS AA2024-T4 AND A356.0

V. V. N. Phani Kumar, supervisor: Prof. K. V. Gobi, and Dr R. Prakash, Title: Investigation on natural and synthetic polymers as an aqueous binder for anodes of lithium-ion batteries (LIBs)

Kummari Shekher, Prof. K. V. Gobi, Title: Development of Hybrid Graphitic Carbon Nanocomposites as Sensing Platform for Pharmaceutical Drugs in-vitro in Biological Fluids

Babji Palakeeti, supervisor: Dr. C Jugun Prakash, and Prof. K.V. Gobi, Title: "DEVELOPMENT OF HPLC AND LC-MS BASED ANALYTICAL METHODS FOR THE ANALYSIS OF ANTICANCER, ANTIEPILEPTIC AND ANTIHYPERTENSION DRUGS"

Kota Sathish, supervisor: Dr. D. Kashinath, Title: Synthesis and functionalization of spirooxindoles using organic bases, organocatalytic and catalyst-free conditions

Vinay Pogaku, supervisor: Dr. B. Srinivas, Title: SYNTHESIS AND BIOLOGICAL EVALUATION OF NOVEL NOVEL TRIAZOLE BASED HETEROCYCLIC AND SPIRO HETEROCYCLIC COMPOUNDS

Suresh Siliveri, supervisor: Dr. N. Venkatathri, Title: Development of novel strategies for rapid synthesis of silicoaluminophosphate molecular sieves in non-aqueous media and catalytic application studies on metal supported SAPO-35.

### Details of students joined in higher educational institutes

<b>Passed out students' information:</b>	
Number of students completed the program	39
Number of students pursuing Higher studies	04
Number of students pursuing Jobs	10

Ms. Ridhi M.Sc. Chemistry (Organic Chemistry specialization) student of current passed out batch (2019-2021) has been selected for a PhD programme abroad

NAME	JOB / PhD / Project	NAME OF COMPANY / INSTITUTE	ADDRESS OF COMPANY	PACKAGE (Annual)

Amit Barsiwal	Project Associate I (Medicinal Chemistry)	CSIR CDRI	Lucknow Uttar Pradesh	
Ajay Kumar Panigrahi	Assitant Lecturer In IIT JEE Chemistry	Aakash Educational Service Limited	Delhi	6.75 LPA
A Sheik Nilofer	Manufacturing Engineer	Akzonobel India Private Limited	Bangalore Karnataka	8.97 LPA
Ria Mishra	Faculty Chemistry Teacher	Turito	Hyderabad Telangana	4.5 LPA
Sayan Goon	Faculty Chemistry Teacher	Turito	Hyderabad Telangana	4.5 LPA
Shubham Patil	Program Associate	Avanti Fellows	Karnataka	4 LPA
Desai Fenilkumar	Assitant Lecturer in Medicinal Chemistry	Aakash Educational Service Limited	Delhi	6.75 LPA
Shivangi Srivastav	Program Fellow	Avanti Fellows	Karnataka	
Neha Kumari		Planet Spark		6.5 LPA

### Department Outreach Activities

Science Communication, Popularization and Extension (SCOPE) project preliminary meeting held on 8-4-2021 at IICT, Hyderabad, Jointly organized by Vigyan Prasar (DST), NIT Warangal and IICT , Hyderabad: Chief Guest: Prof N. V. Ramana Rao, Director

Coordinated by: Prof. A. Ramachandraiah, Nodal Officer, RAA & Prof. K. Laxma Reddy Director, Vigyan Prasar, Director, IICT, Vice-Chancellor, HCU graced the occasion





## సైన్స్ ఆవిష్కరణలను ప్రజానికంలోకి తీసుకెళ్లాలి

**మనతెలంగాణ/తార్కాక :** సైన్స్ను ప్రజల్లోకి తీసుకెళ్లెందుకు కేంద్ర ప్రభుత్వ శాఖ, సాంకేతిక శాఖ ఆధ్వర్యంలో విజ్ఞాన ప్రసార అనే కార్యక్రమాన్ని చేపడుతుంది. తెలుగులో స్కోప్(సైన్స్ కమ్యూనికేషన్, పాపులరైజేషన్ అండ్ ఎక్సటెన్షన్) పేరుతో వరంగల్ లోని ఎన్ఐటి, ఐఐటి హైద్రాబాద్, తెలంగాణ అకాడమి ఆఫ్ సైన్స్ నయంకంగా ఈ కార్యక్రమాన్ని నిర్వహిస్తున్నాయి. ఇందులో భాగంగా గురువారం తార్కాక ఐఐటిలో ప్రొ.రామచంద్రయ్య, ప్రొ.లక్ష్మారెడ్డి, ప్రొ.బిఎన్.రెడ్డి సమన్వయంలో ప్రాథమిక సమావేశాన్ని నిర్వహించారు. ఈ కార్యక్రమానికి ముఖ్యఅతిథులుగా వరంగల్ నిట్ డైరెక్టర్ ప్రొ. రమణరావు, విజ్ఞాన ప్రసార డైరెక్టర్ డా. నకుల్ పరాశర్, సెంట్రల్ యునివర్సిటీ వీసీ ప్రొ.అప్పారావు, సీసీఎంబీ మాజీ డైరెక్టర్ సి.హెచ్. మోహన్ రావు, ప్రముఖ శాస్త్రవేత్త డా.టి.వి. వెంకటేశ్వరన్ తదితరులు హాజరయ్యారు. ఈ సందర్భంగా వారు



మాట్లాడుతు ప్రజల్లోకి సైన్స్ను తీసుకెళ్లాలని, అందుకోసం పని చేస్తున్న సంస్థలు, వ్యక్తులు ఓక నెట్వర్క్ గా ఎర్పడి స్థానిక భాషల్లో సైన్స్ ఆవిష్కరణలను ప్రజానికంలోకి తీసుకెళ్లడానికి కృషి చేయాలన్నారు. సైన్స్ ఫలాలను ప్రజానికానికి చేరవేయడంలో స్థానిక భాష, కార్యకర్తలు, నెలవారిగా ప్రచురించే మ్యూగ్జెన్లు, సైన్స్ ప్రచురణలు, డాక్యుమెంటరీలతో పాటు ప్రజాకళలు, మీడియా ప్రధాన పాత్ర పోషిస్తాయని తెలిపారు.

**మన హైదరాబాద్** Fri, 09 April 2021 <https://epaper.manatelangana.news/c/59662876>

Members of the Youth Red Cross Society (YRCS) of the National Institute of Technology (NIT) – Warangal, celebrated the Deepavali festival at Oasis Orphanage in Hanamkonda on Thursday. The NITW Dean Prof J V Ramana Murthy and Dr B Srinivas took part in the celebrations. They called upon the inmates of the home to take advantage of the opportunities to reach higher goals in their life and contribute to the progress of the country.

The NITW students have motivated them with their pep-talk. Later, fruits and crackers were distributed to the children and celebrated the festival with joy and fervour. Dr K Hariprasad, faculty in-charge of NITW Youth Red Cross Society (YRC), Dr Sampath Kumar, Pujitha YRC Club General Secretary and others participated in the celebrations.

Members of Youth Red Cross Club 2021 - 2022 National Institute of Technology Warangal and Youth for Seva observed the National Constitution Day at NITW Hanamkonda. During the event Adv. P.Niroop Reddy who is an advocate of the Supreme Court delivered a talk on "Constitution Awareness" has created a Unique Perspective on The Constitution in the minds of students subsequent with Arunmayee Jandhyam, Who is a social Activist reminded the students about the service to society and Sowmithri Lakshmana Chari have shared Valuable Words with the gathering. Thus the event was made a great success by the initiation and execution by the faculty advisors Dr. P. Sampath Kumar, Dr. Hariprasad, General Secretary Mohan with the support from Dean Student Welfare Dr. J.V. Ramanamurty and the Director Prof. N.V. Ramana Rao.







<https://telanganatoday.com/nitw-students-celebrate-diwali-at-orphanage>

### **Department Association/Students Clubs Activities**

Chemistry Association was inaugurated on 28th November 2020 with Dr. Shilesh Upreti as the Chief Guest and Prof. NV Ramana Rao, Director, NIT Warangal and Prof. JV Ramanamurthy, Dean, SW as the Guests of Honor. Office Bearers of chemistry department have been elected with Dr. Ms. M. Ragasudha as the Faculty Advisor. Dr. Shilesh Upreti, CEO, C4V, CHAIRMAN iMperium3 INCORPORATION, USA (which provides energy storage systems), an entrepreneur, mentor and inventor of multiple breakthrough technologies has delivered a lecture on "Chemistry and

Entrepreneurship, synchronizing best of yourself , one step at a time" during the inaugural of the Chemistry Association.

Chemistry Association was inaugurated on 18th September 2021 with Prof. Venkatram R Mereddy as the Chief Guest and Prof. NV Ramana Rao, Director, NIT Warangal and Prof. JV Ramanamurthy, Dean, SW as the Guests of Honor. Office Bearers of chemistry department have been elected with Dr. Ms. M. Ragasudha as the Faculty Advisor. Prof. Venkatram Mereddy, Professor, Department of Pharmacy Practice and Pharmaceutical Sciences, University of Minnesota, USA delivered a lecture on "Musings of an organic chemist's foray into biology in search of simple therapeutics for complex diseases" during the inaugural of the Chemistry Association.

Career guidance by Alumni of the department to pursue Ph.D. in abroad on 19th September 2021

Invited talk by Prof. A. Ramachandraiah, Professor of Chemistry (HAG) Retired entitled "MICHAEL FARADAY -A Scientist to be inspired by..." on 24th September 2021.

A webinar on Study Abroad-unlocking the opportunities for the Masters students by Mrs. Sarith Sinha, General Manager, Educational Counsellor at IMFS, Warangal on 12th October 2021

A power packed motivational session by Dr. Vangeepuram Sreenath Chary, Triple Guinness World Record Holder on "Success strategies for Successful Tomorrow" on 23-10-2021

### Any other Department Specific

The Department of Chemistry organized an a Three-Day International Conference on "Conventional and Digital Methods in Chemical Education (CDMCE-2021)" during 29th – 31st July, 2021, on the eve of the retirement and in the honour of a senior chemistry faculty, Prof. A. Ramachandraiah, who is retiring after 36 years of service on 31.07.2021.

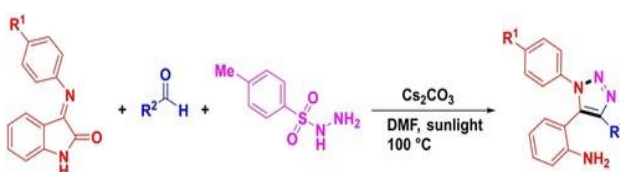
### Research Highlights



Dr. B. Srinivas, Assistant Professor, Department of Chemistry and his research student has published their work in a reputed journal "Advanced Synthesis & Catalysis" (Wiley Online Library) with novel methodology for the synthesis of triazoles without hazardous transition metals, azides and oxidant-free reagents.

#### A Photoinduced Multicomponent Regioselective Synthesis of 1,4,5-Trisubstituted-1,2,3-Triazoles: Transition Metal-, Azide- and Oxidant-Free Protocol

Bhargava Sai Allaka, Srinivas Basavoju\*, Gamidi Rama Krishna, *Advanced Synthesis & Catalysis*, Volume 363, Issue 14. <https://doi.org/10.1002/adsc.202100321>, [Impact Factor: 5.837]



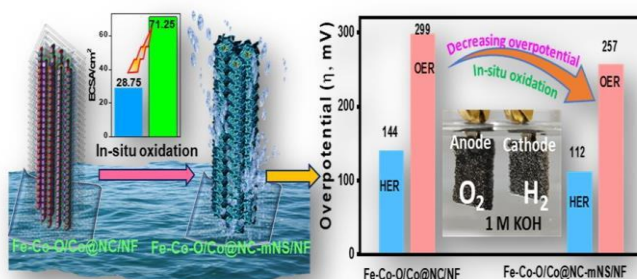
- One pot three component
- Transition metal free
- Azide free
- Broad substrate scope
- High regioselectivity



Dr. G. Rajeshkhanna, Assistant Professor, Department of Chemistry, NIT Warangal in collaboration with Prof. Joong Hee Lee, Department of Nano Convergence Engineering, Jeonbuk National University, Republic of Korea has published his research work in a reputed journal 'Small' (Wiley Online Library) on developing bifunctional electrode material for hydrogen (H<sub>2</sub>) gas generation through electrolysis.

### Alkaline Water Splitting Enhancement by MOF-Derived Fe–Co–Oxide/Co@ NC-mNS Heterostructure: Boosting OER and HER through Defect Engineering and In Situ Oxidation

Thangjam Ibomcha Singh, **Gaddam Rajeshkhanna**, Uday Narayan Pan, Tolendra Kshetri, Han Lin, Nam Hoon Kim,\* Joong Hee Lee\*, *Small*, Volume 17, Issue 29 .  
<https://doi.org/10.1002/sml.202101312>, [Impact Factor: 13.281]

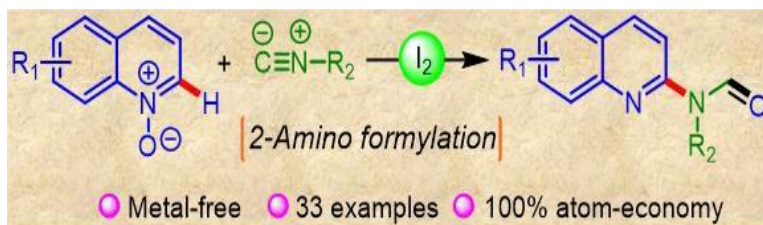


Dr. K. Hari Prasad, Assistant Professor, Department of Chemistry and his research scholars has developed an efficient method for C-2 activation of quinolines for the synthesis of biologically active molecules. This work is accepted in a reputed journal "Advanced Synthesis & Catalysis" (Wiley Online Library).

### Iodine Catalyzed C2-H Formamidation of Quinoline N-oxides using Isocyanides: A Metal-free Approach

Naveenkumar Anugu, Sanjeeva Thunga, Sivaparwathi Golla, **Hari Prasad Kokatla\***, *Advanced Synthesis & Catalysis*, 2021, accepted, [Impact Factor: 5.837]

<https://doi.org/10.1002/adsc.202100883>



A molecular iodine catalyzed regioselective insertion of isocyanide into C2-H of quinoline N-oxides has been developed. The reaction proceeds through the nucleophilic addition of isocyanide on quinoline N-oxides followed by rearrangement in presence of iodine. This metal-free reaction affords rapid access to quinoline 2-formamides with exceptional functional group tolerance, broad substrate scope and 100% atom-economy.



S. Nagarajan and co-workers book chapter scheme indexed in the preface of the book entitled “Metal, Metal Oxides and Metal Sulphides for Biomedical Applications”, Environmental Chemistry for a Sustainable World 58, Springer, Cham



Application of CuO nanoparticles in the fields of medicine and biology (Chap. 9)

## Facilities.....

### ➤ FT-Infra Red Spectrophotometer



<b>Faculty In-Charge</b>	<b>Dr. K. Hari Prasad / Dr. C. Jugun Prakash</b>
<b>Cost</b>	<b>Rs. 12.5 L</b>
<b>Year</b>	<b>2014</b>
<b>Specifications</b>	<ul style="list-style-type: none"> <li>• Detector Type: LiTaO<sub>3</sub></li> <li>• Operating range: 5-45 °C</li> <li>• Wavelength : 8,300 - 350 cm<sup>-1</sup></li> </ul>
<b>Applications</b>	<ul style="list-style-type: none"> <li>• IR spectra in the near-IR, mid-IR, and far-IR region</li> <li>• Solid samples, biological and materials – ATR facility.</li> </ul>

### ➤ UV-Vis DRS Spectrophotometer



<b>Faculty In-Charge</b>	<b>Dr. Vishnu Shanker / Dr Ravinder Pawar</b>
<b>Cost</b>	<b>Rs. 14.8 L</b>
<b>Year</b>	<b>2012</b>
<b>Specifications</b>	<ul style="list-style-type: none"> <li>• Double-beam spectrometer</li> <li>• Power requirements: 100 V to 240 V</li> <li>• Ambient operating temp 15 °C to 35 °C</li> <li>• 20% to 80% relative humidity</li> <li>• Wavelength range: 200 – 900 nm</li> </ul>
<b>Applications</b>	<ul style="list-style-type: none"> <li>• To record absorption/transmittance spectra of the compounds</li> <li>• Pigments, plastics, paints , thin film materials</li> </ul>

### ➤ 400 MHz NMR Spectrometer



Faculty In-Charge	Dr. K. Hari Prasad
Cost	Rs. 183 L
Year	2014
Specifications	<ul style="list-style-type: none"> <li>• Frequency Resolution: &lt;0.005Hz</li> <li>• Phase resolution: &lt; 0.006</li> <li>• Receiver bandwidth: Up to 5 MHz</li> <li>• Single phase console</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Can record <math>^1\text{H}</math>, <math>^{13}\text{C}</math> NMR, <math>^{15}\text{N}</math>, <math>^{31}\text{P}</math> spectra of compounds</li> <li>• Variable temperature NMR</li> </ul>

### ➤ Flash Chromatography



16-12-2021

Faculty In-Charge	Dr. K. Hari Prasad
Cost	Rs. 18.2 L
Year	2013
Specifications	<ul style="list-style-type: none"> <li>• <math>R_f</math> is a 10–100 mL/min, 150 psi system that pumps two solvents to form a binary gradient.</li> <li>• supports liquid or solid sample introduction,</li> <li>• fixed-wavelength UV detector (254 nm) and can be configured for full-spectrum (200–400 nm) UV detection</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Flash chromatographic separation</li> <li>• Detection by UV wavelength</li> </ul>

### ➤ Fluorescence Spectrometer



Faculty In-Charge	Dr. Raghu Chitta
Cost	Rs. 7.0 L
Year	2013
Specifications	<ul style="list-style-type: none"> <li>• Excitation: 200-750 nm</li> <li>• Emission: 200-650 nm</li> <li>• Sensitivity: S/N <math>\geq</math> 50</li> <li>• Lamp: 150W Xenon lamp</li> <li>• Spectral bandwidth: 12 nm</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Emission/Excitation spectra</li> <li>• Photo-reactive catalysts, Display devices, LEDs</li> </ul>

### ➤ Electrochemical Workstation



Faculty In-Charge	Prof. K. V. Gobi
Cost	Rs. 7.4 L
Year	2015
Specifications	<ul style="list-style-type: none"> <li>• Potentiostat</li> <li>• Galvanostat</li> <li>• Potential Range: -10 to 10V</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Sweep /Step/Stripping</li> <li>• Corrosion, redox enzymes</li> <li>• Electrocatalysts</li> </ul>

➤ **ELISA Plate Reader**



Faculty In-Charge	Prof. P V Srilakshmi
Cost	Rs. 2.5 L
Year	2016
Specifications	<ul style="list-style-type: none"> <li>• Wavelength range: 400-750 nm</li> <li>• Measurement speed : 5s, 96- plate</li> <li>• Light source : Quartz tungsten halogen lamp</li> <li>• Detector: Eight(8) silicon detectors</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Enzymic activity</li> <li>• Biological and chemical processes of samples in microtiter plates</li> </ul>

➤ **Sensitive Microbalance**



Faculty In-Charge	Prof. P V Srilakshmi
Cost	Rs. 1.1 L
Year	2016
Specifications	<ul style="list-style-type: none"> <li>• Delivers an incredible full resolution with a capacity of up to 0.1 µg readability (that's 0.0000001 grams); upto 200 mg.</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• low weights – catalysis, thin-film coatings, adsorption anal.</li> </ul>

➤ **HPLC**



Faculty In-Charge	Prof. P V Srilakshmi
Cost	Rs. 7.5 L
Year	2013
Specifications	<ul style="list-style-type: none"> <li>• Detection Column: Esi Positive Mode</li> <li>• Column: 30 mmL x 3,0mmI.D.</li> <li>• Mobile Phase: (a) 1% aqueous solution of formic acid, (b) Acetonitrile</li> <li>• Flow rate: 0.5 mL/min.</li> <li>• Temperature: 50°c</li> <li>• Injection Volume: 1mL</li> <li>• Column Pressure: 14Mpa</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Separation of compounds under high pressure; Biofuels,</li> </ul>

➤ **Gas Chromatograph**



16-12-2021

Faculty In-Charge	Dr. N. Venkatathri
Cost	Rs. 11.4 L
Year	2015
Specifications	<ul style="list-style-type: none"> <li>• Enlarged haptic color LCD</li> <li>• 3 inlets/detector installation</li> <li>• Flame ionization detector</li> <li>• Exceptional reproducibility: RSD (~0.0334)</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Residual Solvent Analysis</li> <li>• VOC Analysis, Biofuels,</li> <li>• Pyrolysis GC Analysis</li> <li>• Fatty Acid Analysis</li> </ul>



### ➤ Refrigerated Centrifuge



<b>Faculty In-Charge</b>	<b>Prof. K. V. Gobi / Dr. Vishnu Shanker</b>
<b>Cost</b>	<b>Rs. 2.7 L</b>
<b>Specifications</b>	<ul style="list-style-type: none"> <li>Control: Microprocessor with variable frequency drive</li> <li>Max Speed: 20000 rpm</li> <li>Max RCF: 37000 x g</li> <li>Temp. Control: -20°C to 40°C</li> </ul>
<b>Applications</b>	<ul style="list-style-type: none"> <li>High speed centrifuging applications even at lower temperatures</li> </ul>

### ➤ Tubular Furnace



16-12-2021

<b>Faculty In-Charge</b>	<b>Dr. Vishnu Shanker/ Dr. M. Raghasudha</b>
<b>Cost</b>	<b>Rs. 2.3 L</b>
<b>Year</b>	<b>2017</b>
<b>Specifications</b>	<ul style="list-style-type: none"> <li>high-grade insulation materials - low energy consumption and high heating rates</li> <li>The insulation and molybdenum disilicide (MoSi<sub>2</sub>) At higher temperatures and in the presence of oxygen, MoSi<sub>2</sub> that protects the heating elements against further thermal or chemical corrosion; 1000 C.</li> </ul>
<b>Applications</b>	<ul style="list-style-type: none"> <li>an electric heating device used to conduct syntheses and purifications of inorganic compounds and occasionally in organic synthesis.</li> </ul>

### ➤ Rotary Evaporator



<b>Faculty In-Charge</b>	<b>Dr. K Hari Prasad</b>
<b>Cost</b>	<b>Rs. 4.6 L</b>
<b>Year</b>	<b>2014</b>
<b>Specifications</b>	<ul style="list-style-type: none"> <li>Hand Lift</li> <li>Height adjustment speed: Manual</li> <li>Height adjustment mm:155</li> <li>Rotation speed rpm:20-280rpm</li> <li>Heating Capacity:1300 W</li> <li>Temp. range of the Heat bath:20-210°C</li> <li>Temperature accuracy:±1K</li> <li>Bath Temp. Display: digital</li> <li>Volume heating bath:4.5 l</li> <li>Supply power:1400 W</li> </ul>
<b>Applications</b>	<ul style="list-style-type: none"> <li>Evaporation of the solvents from the reaction mixture</li> </ul>

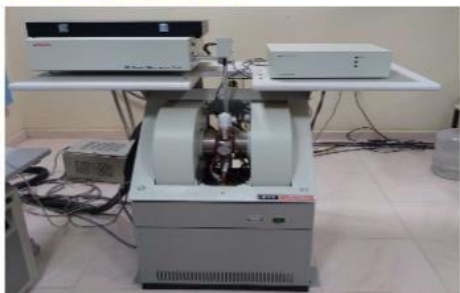


➤ **Rotating Disk Electrode**



Faculty In-Charge	Prof. K. V. Gobi
<i>CAI Facility</i>	
Cost	Rs. 6.1 L
Year	2017
Specifications	<ul style="list-style-type: none"> <li>• Rotation Speed (rpm) : 0 – 10000.</li> <li>• Output Potential: 0 - 10 V</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Investigating reaction mechanisms related to redox chemistry</li> <li>• Flow-cell analysis</li> </ul>

➤ **ESR Spectroscopy**



16-12-2021

Faculty In-Charge	Prof. K. Laxma Reddy
<i>CAI Facility</i>	
Specifications	<ul style="list-style-type: none"> <li>• EStandard Frequency (X band) - 8.75-9.65 GHz</li> <li>• Sensitivity - 7x10<sup>9</sup> spins/0.1mT</li> <li>• Resolution - 2.35 (micro)T or better</li> <li>• Temperature study - Any temp. from +200°C to liquid nitrogen temp.</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Molecular and Crystal Struc.</li> <li>• Magnetic materials</li> <li>• Reaction Kinetics</li> <li>• Electron transport</li> </ul>

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➤ **LC-HRMS Analyzer (CAI Facility)**



Faculty In-Charge	Dr. D. Kashinath
Cost	Rs. 125 L
Year	2015
Specifications	Agilent Tech. USA; Q TOF 6530
Applications	<ul style="list-style-type: none"> <li>• Molecular structure of Petroleum compounds, industrial products, pharmaceuticals, biomolecules</li> <li>• Purity of industrial products be established.</li> </ul>

➤ **PARSTAT 4000A Electrochemical WS (CAM Facility)**



Faculty In-Charge	Prof. K. V. Gobi
Cost	Rs. 24 L
Year	2015
Specifications	<ul style="list-style-type: none"> <li>• Potentiostat</li> <li>• Electrochem. Impedance</li> <li>• -20 to 20V; 4 A ; upto 10 MHz</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Corrosion studies</li> <li>• Fuel cell development</li> <li>• Battery testing, EIS</li> <li>• Biofuel cells, Capacitors</li> </ul>

➤ **TGA-DTA Analyzer**  
(CAM Facility)



Faculty In-Charge	Dr. Vishnu Shanker
Cost	Rs. 16.0 L
Year	2015
Specifications	<ul style="list-style-type: none"> <li>• Up to 1200 °C</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Composite materials</li> <li>• Finger print analysis</li> <li>• Drug compounds</li> </ul>

➤ **ORD-CD**



Faculty In-Charge	Prof. A. Ramachandraiah
<i>CAM Facility</i>	
Specifications	<ul style="list-style-type: none"> <li>• Cost : Rs. 55 L; Biologic Czech, MOS-500 Model</li> <li>• Three stage wavelength selection to bypass limitations prism-based.</li> <li>• Operating cost is less when operated below 195 nm.</li> </ul>
Applications	<ul style="list-style-type: none"> <li>• Enantiomeric compounds; Non-linear optical materials</li> <li>• Secondary structure of proteins, Ligand-Bio-receptor interactions</li> </ul>

## Summary

S.No.	Activity	Number
<b>1</b>	<b>Publications (Peer Reviewed Journals/ conferences)(SCOPUS/SCI)</b>	112
	International Journals	110
	National Journals	0
	International Conferences	0
	National Conferences	0
<b>2</b>	<b>Funded Research Projects/SPARC projects (2019-20)</b>	16
	Completed Projects	0
	DBT, SERB	12
	Ongoing Projects	15
	IMPRINT PROJECTS	0
	FIST PROJECT (1.67 crores	1
	BRICS project	0
	DST, SERB, BRNS, DRDO	16
<b>3</b>	<b>SPARC Project Workshops</b>	<b>1</b>
<b>4</b>	<b>Consultancy Works (2019-20)</b>	<b>0</b>
<b>5</b>	<b>Patents</b>	<b>2</b>
	Awarded	0
	Filed	2
<b>6</b>	<b>Books and Book Chapters</b>	<b>5</b>
	Books	0

	Book Chapters	5
<b>7</b>	<b>Conferences/ Workshops/GIAN courses/FDPs Conducted</b>	<b>10</b>
<b>8</b>	<b>Guest talks/ Webinars delivered</b>	<b>63</b>
<b>9</b>	<b>New Labs Established (Equipment/Software Procured)</b>	<b>Rs. 54.9 lakhs</b>
<b>10</b>	<b>Awards/Recognitions/Achievements</b>	<b>3</b>
<b>11</b>	<b>Research Guidance (Completed in 2019-20)</b>	<b>10</b>
<b>12</b>	<b>International Visits of the Faculty Members/ students</b>	<b>0</b>
<b>13</b>	<b>Students Achievements</b>	
	Placements	10
	B.Tech	-
	MTech	-
	Higher Education (M.Tech, PhD at IITs & Abroad)	4
	Lab Development Activities	-
	Conference visits	-
<b>14</b>	<b>Association Activities</b>	<b>6</b>
<b>15</b>	<b>Distinguished Guests visiting the Department/Delivering Expert Lecture/Keynote Address</b>	<b>-</b>
<b>16</b>	<b>Outreach Programmes</b>	<b>3</b>

## SCHOOL OF MANAGEMENT

Recognizing the need of techno management, the institute has designed a comprehensive MBA program exclusively for engineers. Thus, came to light the "School of Management (SOM)" at NIT Warangal in 2000. The MBA program offered by the School of Management is exclusively for engineering graduates. A two-year course runs into 8 quarters. The program has extensive electives in the specialized areas of Marketing Management, Human Resource Management, Financial Management, Operations Management, Information Technology and allied areas of management. Students are exposed to industrial training for a period of eight weeks, after completion of first year and the project work for a period of twelve weeks during their final quarter. The School of Management provides a well-balanced combination of academic and practical business oriented content. The updated curriculum with its wide range of video materials, databases like proress, case studies, research projects and other tools aim at enhancing the understanding of the business reality and imbibing problem-solving skills. The School has been accredited with Tata Consultancy Services and is having significant placements. The School has fully air-conditioned classrooms with Wi-Fi facility.





**Faculty details:**



**Prof. M. Ravindar Reddy**

**Professor**

Economics, Agriculture  
Economics, Rural Marketing



**Dr. K. Padma**

**Associate Professor**

Economics, Financial  
Management



**Dr. P. Ramlal**

**Associate Professor**

Human Resource  
Management,



**Dr. V. Rama Devi (HoD)**

**Associate Professor**

Organizational Behavior &  
Human Resource  
Management



**Dr. G. Sunitha**

**Assistant Professor**

Behavioral Finance, Financial  
Markets

Soft  
Skills,



Corporate Training

**Dr. S. L. Tulasi Devi**

**Assistant Professor**

Corporate Finance, Financial  
Econometrics



**Dr. Francis Sudhakar**

**Assistant Professor**

Consumer Behavior and  
Industrial Marketing



**Dr. K. Lakshminarayana**

**Assistant Professor**

Information Systems, Socio  
Technical systems and E-  
Governance



**Dr. P. Ramachandra Gopal**

**Assistant Professor**

Supply chain Management,  
Sustainability, Operations  
Management.





**Dr. T.Rahul**

**Assistant Professor**

Marketing Research,  
Analytics

### Publications

#### (in Peer Reviewed Journals)

**Kompella, L.** (2021). The transition of a socio-technical system to a smart grid: illustrated with the Indian electricity network. *International Journal of Energy Sector Management*, Vol. ahead-of-print No. ahead-of-print.

**Kompella, L** (2021) Influence of coalitions and embeddedness on public innovation: illustrated with the Indian agriculture, *Innovation: The European Journal of Social Science Research*, DOI: 10.1080/13511610.2021.1964353

Sharon Rose J, **Gopal PRC**, Ramkumar M. Arputham, (2021) , " Operational efficiency of tow trucks: a case based evidence from an Indian automobile manufacturer", *Journal of Facilities Management*, 1472-5967, DOI 10.1108/JFM-08-2020-0050

Reddy, J.M; A, Rao, A; Krishnanand, L; **Gopal,PRC** (2021)," Systemdynamics modelling of fixed and dynamic kanban controlled production systems: A supply chain perspective. *Journal of Modelling in Management*.

Singh, D., Lanka, K., & **Gopal, PRC.** (2021). Predicting Sustainable Supply Chain Performance Based on GRI Metrics and Multilayer Perceptron Neural Networks. In *Emerging Frontiers in Operations and Supply Chain Management* (pp. 159-180). Springer, Singapore.

Kumari, T., & **Rama Devi, V.** (2021). Impact of Work-Family Conflict on Career Development of Knowledge Workers in Indian IT Sector, *International Journal of Human Capital and*

### Publications

#### (in Peer Reviewed Conferences)

Varsha CH and **PRC Gopal**, Prediction of customer satisfaction through online reviews for Ecofriendly products POMS International, Global Conference on Innovations in Management and Business (GCIMB) during 27th and 28th July, 2021, NIT Warangal.

Rusha Sri Y, and **PRC Gopal** Customer Satisfaction and Requirement Analysis towards Evehicles using Kano Model: A Pilot Study, Global Conference on Innovations in Management and Business (GCIMB) during 27th and 28th July, 2021, NIT Warangal.

Shashank Hariharnath Tripathi, Krishnanand Lanka, **PRC Gopal** Evaluating Climate Change Risks in Supply Chain Within the Indian E-Commerce Industry Using AHP and DEMATEL Techniques, Global Conference on Innovations in Management and Business (GCIMB) during 27th and 28th July, 2021, NIT Warangal.

Kaleel J, **PRC Gopal**, Bimal Kumar Mawandiya Study on Driving Factors for Industry 4.0 of Retail Sector Supply Chain, Global Conference on Innovations in Management and Business (GCIMB) during 27th and 28th July, 2021, NIT Warangal.

*Information Technology Professionals, 12(3). (Scopus indexed).*

Dasari Shanti Ratnam, V. **Rama Devi**, Resource based view of HR Analytics using Content analysis Global Conference on Innovations in Management and Business (GCIMB) during 27th and 28th July, 2021, NIT Warangal.

Akhila Potla, **V. Rama Devi**, Adoption and Impact of People Analytics in the IT sector Global Conference on Innovations in Management and Business (GCIMB) during 27th and 28th July, 2021, NIT Warangal.

K. Aruna, **K. Padma**, New strategies implemented by the Warangal durrie weavers during pandemic period-a case study, Global Conference on Innovations in Management and Business (GCIMB) during 27th and 28th July, 2021, NIT Warangal.

Naini Shalini Reddy, **M. Ravinder Reddy**, Contemporary and Significant Factors Affecting Green Purchase Intention and Behaviour Global Conference on Innovations in Management and Business (GCIMB) during 27th and 28th July, 2021, NIT Warangal.

### Research guidance

One scholar awarded Ph.D Degree during 2019-20

Mr Narasima Murty Indrakanti has been awarded Ph.D degree under the supervision of Prof. M.Ravinder Reddy for thesis entitled "Emperica; analysis of non-performing assets in Indian banking sector-An Analytical study" on 11-12-2020

Mr.Seshadri Savalgi (Finance Director General Mills)-Progressive career in a VUCA world  
Mr.Prashanth Handoo (Phoenix Leadership Learning solutions)-Leadership is a lot like love.  
Mr.Ankush Guptha (Recruiter at KPMG India )-Expectations of corporates from MBA students.  
Mr.Sumith Bhadani ( Manager -Alstom) - Execution Excellence  
Ms.Shyla Krishnamurthy ( Co-founder &CEO Tvamway Global Services) -Leading With growth mind set.

Karthik, V. **Rama Devi**, High Performance Work Systems – A Bibliometric Analysis Padamata Global Conference on Innovations in Management and Business (GCIMB) during 27th and 28th July, 2021, Warangal.

### Research Fundeded Projects

**Prof. M. Ravinder Reddy**, a project entitled "A study on social security for women in unorganised sector" in India from ICSSR (Project Number: 127/ICSSR-SRC/2020).

**Dr.V.Rama Devi** and **Dr.T.Rahul** a project titled "Transition to Remote Learning Due to Covid19 – The Experiences of Faculty of Higher Education Institutions in India from ICSSR (Project Number: ICSSR/285/11/2021-22)

### Workshops Organized

Conducted a online workshop for the School of Mangement students on "Business process automation with Quixy's No code Platform" on 6th November, 2020.

### Student Achievements and Activities

Shubhabrato Sarkar, second year MBA student awarded second prize in AIMA-ICRC case study competition where 200+ top B-Schools participated (Includes IIMA, B,C & XLRI).

### Key Corporate and Leadership Webinar Series.

Mr.P.V Vijaya Raghavan (Vice President and Country Head-Japan, South Korea, China, Taiwan,South Korea, L&T Technology Services Ltd)-Japan Culture and Opportunities

Mr.Vikas Dua (Chief HR Mentor, Attayan)- Making Virtual Recruitment worl for stduents  
Ms. Pauline Laravoire (Co-founder of Y-East)- Significance of Social Entrepreneurship.

Mr.Adiyan Prabhakaran ( Supply Director, Redbus) -Jolt of COVID-19 on bus transport and strategies to cope up.

Mr.Parag Ray ( BDE and Pre sales Consultant, TCS) -Personal Branding

Mr.Neetesh Dixit (Sr.Operations Associate, Google) -Career Guidance and Experience sharing

Mr.Selvaraj V ( Consultant)-Digital Transformation in product development.  
 Vidhya Veeraraghavan ( Vice President-Analytics, Standard Chartered Bank) –Data Analytics Introduction and Applications.  
 Mr.Jaskaran Kohli –(Founder-BeyondCV Consulting) –Resume Building

### News Letter Launch

School of Management started quarterly newsletter. It focuses on activities, which happened in every quarter at school.



### Social Media Presence

A department blog developed where articles are presented by students  
 SOM page on facebook, Linkedin and Instagram are regularly maintained.  
 Facebook has 1960 followers  
 Linkedin has 2050 followers ( We stand first among all departments of management at NITs)  
 Instagram has 200 followers  
 Research scholars maintain a blog on which recent research trends are posted in the areas of management.



### Abhiyan Club

Abhiyan Club is a departmental club of School of Management, NITW established in 2003. It is a student centric club aiming

To upscale the leadership, interpersonal and overall soft skills. All through the academic year, Abhiyan actively conducted events. The activities include Mystery Writer, JAM, Marketing Technique, Building Towers, Logo Identification, CURA Promo Launch, Budget 2020, Resume Building sessions, Management Word games etc.

During the lockdown, Abhiyan switched to online platforms to conduct their events online. The online activities included Quizzes Case study discussions on Marketing, Operations, HR, IT, Finance Areas, Abhiyan News Board, Virtual Discussions, Video Presentations.

## DEPARTMENT OF HUMANITIES AND SOCIALSCIENCES

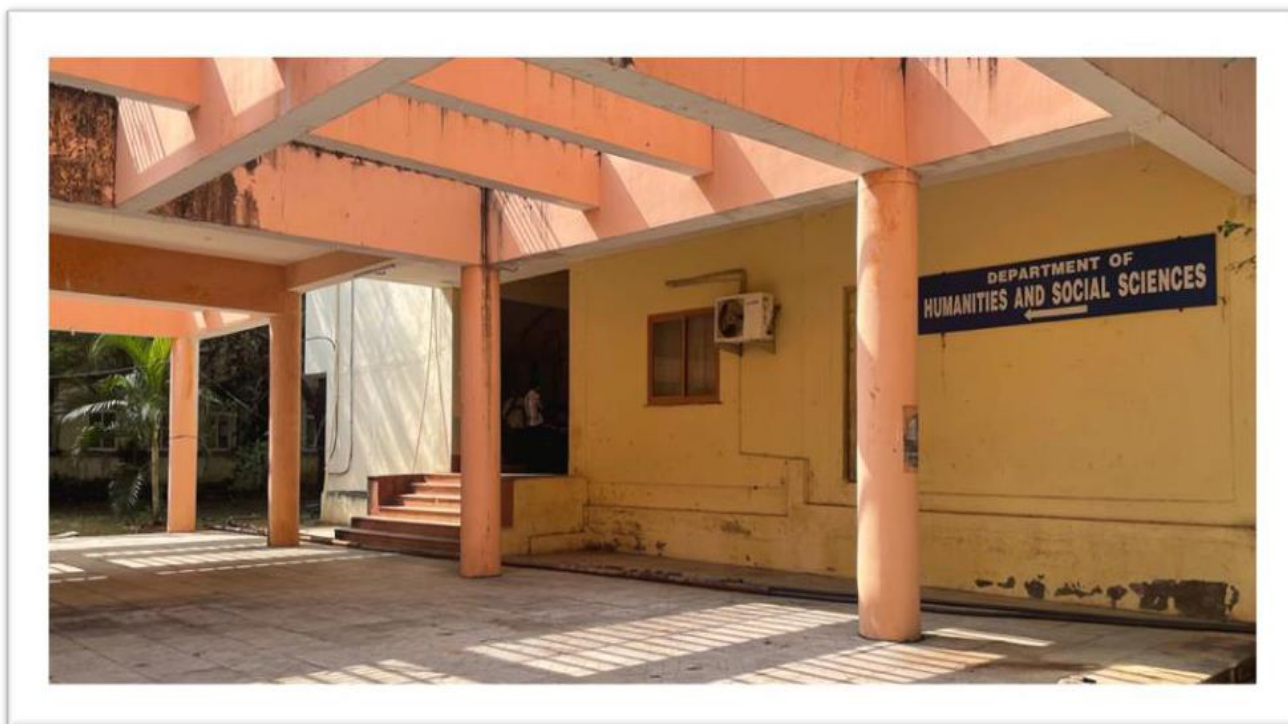
The Department of Humanities and SocialSciences at NIT Warangal was started in2009. The Department offers courses across the board ranging from basic to advanced courses in English Communication and Two Foreign languages catering to diverse needsof students across UG /PG and PhD levels.

Besides, the Department also offers research programs in the broad areas of ELT, British literature and American literature through regular, part time and self- finance modes.

The Department has highly qualified and committed faculty members who are wellrecognized and are members of many Boards across colleges affiliated to state leveluniversities.

This academic year as per NEP guidelines 2020 the Department of Humanities and Social Sciences has revised the syllabi of existing courses and has designed 16 new courses at UG/PG/PhD levels. As part of curriculum revision the department has also designed a Minor program to be offered at UG Level titled 'Professional Communication Skills for STEM



The Department of H&SS constantlythrives to impart quality education and life skills that enable students tobecome successful on the personal, academic, and professional front; to foster critical thinking through a diverse range of courses aimed at making students industry ready; to encourage and facilitate research in advanced areas of Humanities.



## Faculty Details:

S. No.	Name of the Faculty Member and Designation	Highest Qualification	Research Interests	Photograph
1.	Dr. K. Madhavi	Ph. D	Academic writing skills; Designing task-based ESP courses; Multiple intelligences -Visual Literacies; teaching reading and writing using technology; Learner strategies and styles.	
2.	Dr M Raja Vishwanathan/ Assistant professor-Grade1	PhD( ELT)	Bilingualism and bilingual education, Academic writing, critical pedagogy, ideology in language teaching, American literature, British literature, Indian writing in English	
3	Dr. B. Spoorthi Assistant professor- Grade II	Ph. D	Leveraging Technology for Language Learning, Content and Language Integrated Learning, Teacher Education and Reflection, Task Based Language Teaching, Virtual Reality in Education, Virtual Labs for Language Education	



4	Dr.P.Madhumathi Assistant professor- Grade II	Ph.D	Teacher Education, ELT, EAP, Virtual Education, Cultural Studies	
5	Dr. R. Vennela, Assistant Professor- Grade II	Ph. D	Bilingual education, Lexicography, Sociolinguistics	

### Journal Publications

Nirmala Vinodh Ch and Madhavi Kesari 'Teaching English to Professional Students with the Help of MI Approach' in the Research Journal of English (RJOE) International Peer-Reviewed English Journal ISSN: 2456-2696, Vol-6, Issue-1, March 2021, pp 338-349, Indexed in: International Citation Indexing (ICI), International Scientific Indexing (ISI), Directory of Research Journal Indexing (DRJI) Google Scholar & Cosmos.

K. Madhavi., "Analyzing Common Language Errors in Classroom Communication of Engineering Teachers - An Empirical Study' in the "International Journal of Management (IJM), Volume 11, Issue 6, June 2020, pp. 2199-2207; ISSN Print: 0976-6502. and ISSN Online: 0976-6510; Journal Impact Factor (2019) : 11 Calculated by GISI (www.jifactor.com)&quot; Article Id - IJM\_11\_06\_206 Date of Publication - 30 June 2020. Article Link - [https://iaeme.com/Home/article\\_id/IJM\\_11\\_06\\_206](https://iaeme.com/Home/article_id/IJM_11_06_206). 1.(Scopus)

K. Madhavi and; Kavya Rayala., ' Web Based Resources and Tools in Online Learning: A Participatory and Collaborative Method to Enhance Reading and Writing Skills in the Students Studying Intermediate Course of Andhara Pradesh and Telangana States' in "International Journal of Management (IJM)", Volume 11, Issue 4, 2020. [https://iaeme.com/Home/article\\_id/IJM\\_11\\_04\\_073](https://iaeme.com/Home/article_id/IJM_11_04_073) (Scopus)

R. Vennela and; K. M. C. Kandharaja (2021) Agentive responses: a

Academic Report 2020-21  
NIT Warangal

study of students' language attitudes towards the use of English in India, Current Issues in Language Planning, 22:1-2,243-263, DOI: 10.1080/14664208.2020.1744319

### Conference publications

Dr. R. Vennela, presented a paper at HoLLT.net Online Colloquium September 17th, 2021

"Women in the History of Language Learning and Teaching", organised by Universität Bremen and University of Reading, on the topic "Women Teachers and Teachers for Women: a Review of Zenana and Mission Instruction in 19th Century India".

**Dr. Spoorthi B, TIE 4.0 – Leveraging Technology for Industry in Education 4.0**, Three Day Virtual International Conference on 'INNOVATIONS FOR NEW NORMAL' from 23-08-2020 to 25-08-2020, Parkal, Warangal

### Funded Research Projects

Technology-Based Strategy Intervention to Enhance Communication Skills of Arts and Science College Students from Rural Telangana: A rural development project was granted to by Dr.P.Madhumathi, Assistant Professor, Dept., of Humanities and Social Sciences, funded by Impactful Policy Research in Social Science (IMPRESS 2019-2021), ICSSR for developing the communication skills of the rural students studying in Arts and Science colleges of Telangana.



Dr. Spoorthi B is building an Artificially Intelligent Virtual Laboratory to develop Employability Skills of engineering students 'AIVLES' to bridge the Gap between College and the Corporate – of Rs. 2,00,000, funded by ICSSR

Dr. R. Vennela and Mr. K.M.C. Kandharaja. Completed the project titled "Bilingual Teacher Talk: A Study of Telugu-medium Schools". ELTRMS (2019-20), Funded by the British Council.

Dr. R. Vennela, Principle Investigator, Project Title: "Developing a Pilot English-Telugu bilingual pedagogic picture dictionary resource and teacher resource book for low resource ESL contexts", Funded Rs.5.16 lakhs (Hornby Trust, United Kingdom: 2021 – 22).

Dr. Amol Padwad (Ambedkar National University, Delhi), Dr. Krishna K. Dixit (Ambedkar National University, Delhi), Dr. Atanu Bhattacharya (Central University of Gujarat), Dr. R. Vennela, Assistant Professor, Department of H&SS, NITW, Project title: "Textbooks in Historical times: Reviewing the Status of Historical Explorations", Funded Rs.5.14 lakhs (Hornby Trust, United Kingdom: 2021 – 22).

### Conferences, workshops, FDPs, Webinars organized

Dr. B. Spoorthi organised an ATAL (AICTE Training and Learning) Academy Programmes (Five-day Faculty Development Program) titled **Technology, Industry and Education 4.0 (TIE 4.0) from 3<sup>rd</sup> to 11th November 2020.**



### Guest Talks/webinars delivered

Dr. K. Madhavi delivered expert lecture on 'Stress Management and Emotional Intelligence' in a one - week short term course

on 29th October, 2021 "Soft Skills and Professional Ethics" organized by UGC-Human Resource Development Centre, JNTUH, from 25-10-2021 to 30-10-2021.

Dr. K. Madhavi delivered Expert talk on 'Extensive Reading Skills: Challenges in Inculcating Reading Habits Among the Students' in the Eight-day online Faculty Development Programme (FDP) on Reading: Back to the Basics conducted by English Language Teachers' Association of India (ELTAI), from 23<sup>rd</sup> to 31<sup>st</sup> August 2021.

Dr. K. Madhavi has been invited as a keynote speaker during **ELTA KIDS TECHNOTHON 1<sup>st</sup> Anniversary Celebrations Dissemination Event** organised as part of the project 'Igniting Young Minds- Covid 19: A Scope for Remote Learning and Innovative Teaching' organised by ELTA, Warangal Urban on 15<sup>th</sup> August 2021.



College for Women, Hyderabad on 5th November, 2020.

Dr. K. Madhavi is been invited to deliver key note during the International Conference on English Language, Ethics and Learnability' organised by BVRIT, Narsarao Pet, during 30th and 31st July, 2021,

Dr. K. Madhavi delivered expert talk on **"Areas of use - VR in Education: training to acquire certain skills"**, on 27 th July, 2021 in a AICTE sponsored Short Term Training Program (**STTP**) under AQIS on **"Augmented Reality and Virtual Reality** organized by CSE Department, Maharaj Vijayarama Gajapathiraj College of Engineering, **from 26th July 2021 to 31st July 2021** in online mode.

Dr. K. Madhavi delivered Expert talk on 'Language and Vocabulary in Writing a Research Paper' in a One Week National Level Faculty Development Programme ' on Research Skills and the Saptha Yoga of Learning' on 20th July 2021, organized by the Dept of HSS, Sreyas Institute of Engineering & Technology, Bandlaguda, Nagole, from 19-24 July 2021.

Dr. K. Madhavi delivered Expert talk on 'Technical Vocabulary and Language in Writing a Research Paper' on 7th July 2021, during the Online Short -Term Training Programme on 'Writing Quality Research Paper and Proposal' conducted by Applied Mathematics and Humanities Department, Sardar Vallabhbhai National Institute of Technology Surat organized from 6-10 July 2021.

Dr. K. Madhavi delivered Expert talk on 'National Educational Policy Challenges and Implication in Humanities and Social Sciences' at S.B.Jain Institute of Technology Management & Research, (An Autonomous Institute, affiliated to R.T.M.Nagpur University)Nagpur on 17th June 2021

Dr. K. Madhavi delivered expert lecture on 'Stress Management and Emotional Intelligence' on 06-11-2020, in a one - week short term course on "Soft Skills and Professional Ethics" organized by UGC-Human Resource Development Centre, JNTUH, from 03-11-2020 to 07-11-2020.

Dr. K. Madhavi conducted a workshop on 'Developing Academic Writing Skills in a Classroom Context, in a three-day National Webinar organised by the Dept. of English and co-hosted by American Corner, St Francis

Dr. K. Madhavi delivered expert lecture online on 'Global Research of OECD Learning' in a Five Day ATAL FDP on Productivity Enhancement titled 'Technology, Industry and Education 4.0 (TIE 4.0) an AICTE funded program, organised by the Department of Humanities and Social Sciences, National Institute of Technology, Warangal from 03 -07 November 2020.

Dr. K. Madhavi delivered expert lecture on 'Professional Ethics' on 22 Sept, 2020, in the AICTE Sponsored One-Week Online Faculty Development Programme on Life Skills - Emotional Intelligence, organized by Department of Science & Humanities St. Martin's Engineering College (UGC Autonomous) NBA & NAAC A+ Accredited, Dhulapally, from 21-25 September 2020

Dr. Raja Vishwanathan delivered online talk on "Relevance of soft skills in teaching and learning English as a Second language" as part of ELTIF Online lecture series on Language, Literature and Culture Studies on 25 July 2021

Dr. Raja Vishwanathan delivered an online lecture on "Social Emotional Learning" on 7 August 2021 to students of Nalla Narasimha Reddy Group of Institutions, Narapally, Hyderabad

Dr. Raja Vishwanathan delivered an online session at VNIT on 27 September 2021 on "Guidelines for writing effective abstract and summary for research papers" as part of STTP on Scientific Communication and Data Analysis Tools.

Dr. Raja Vishwanathan delivered an online lecture on "Embracing social emotional learning for a meaningful life" to IEEE students of NIT Warangal on 23 October 2021

Dr. Spoorthi B delivered a talk on AR/VR in Education - Technological Advancements and the Paradigm Shift on 21-09-2020 in ATAL FDP on AR/VR, at RYMEC, Bhallari, Karnataka

Dr. Spoorthi B delivered a talk on Technological Advancements and Paradigm Shifts in Education on 21-10-2020 in AICTE

Sponsored STTP at Sri Krishna Institutions, Coimbatore

Dr. Spoorthi B delivered a talk on AR/VR and beyond: Developments in Education 4.0 – AICTE Sponsored STTP on AR/VR (phase 2) on 02-11-2020 in AICTE Sponsored STTP at Sri Krishna Institutions, Coimbatore

Dr. Spoorthi B delivered a talk on Enhancing Communication skills on 21-11-2020 at Sri Sairam Engineering College, Chennai

Dr. Spoorthi B delivered a talk on Writing Grant Proposal on 02-12-2020 in AICTE Sponsored ATAL FDP on Research Methodology at Indian Institute of Information Technology, Nagpur

Dr. Spoorthi B delivered a talk on Successful Writing (Hands-on Session) On 04-12-2020 in AICTE Sponsored ATAL FDP on Research Methodology at Indian Institute of Information Technology, Nagpur

Dr. Spoorthi B delivered a talk on English Technical Communication on 21-11-2020 in Induction Program for first year students organized by Matrusri Engineering College, Hyderabad

Dr. Spoorthi B delivered a talk on 'ROW - Ethics and Values' on 22-11-202 at VIT School of Agricultural Innovations and Advanced Learning (VAIAL), VIT, Vellore

Dr. Spoorthi B delivered a talk on Paradigm shifts in Education: Developments and the way forward on 02-03-2021 at College of Engineering, Trivendrum, Kerala

Dr. Spoorthi B delivered a talk on Introduction to Education 4.0: Pedagogy for the GenZ and GenAlpha on 02-03-2021 at College of Engineering, Trivendrum, Kerala

Dr. Spoorthi B delivered a talk on Tools and Applications for the Education 4.0 Classrooms on 03-03-2021 at College of Engineering, Trivendrum, Kerala

Dr. Spoorthi B delivered a talk on 'Pedagogy for Hybrid Mode - a Hands-on Session' on 03-03-2021 at College of Engineering, Trivendrum, Kerala

Dr. Spoorthi B delivered a talk on Knowing self - Introspection & Reflection on 16-06-2021 in Summer Training Program, ASPIRE, organised by CCPD & ALC, NIT Warangal

Dr. Spoorthi B delivered a talk on Building a Personal Brand - First Impression on 18-06-2021 in Summer Training Program, ASPIRE, organised by CCPD & ALC, NIT Warangal

### **New lab established/ Equipment and Software procured**

Dr. K. Madhavi, TLC Meeting Room budget worth Rs 3,32,406=00 , Meeting Tables and Chairs during 27-11-2020.

Dr. K. Madhavi, Computer Lab, TLC budget worth Rs 1,80,540=00 Computer tables 31-12-2020,.

### **Awards/ Recognitions/ Achievements**

Dr. K. Madhavi received 'Best Performer Faculty Member' certificate during the One Week (Virtual ) International Workshop on "Bridging Industry and Academia in Language Studies" organized by Amity University Jaipur, Rajasthan, from 15th July – 21 July 2021

### **PhD Research guidance (Completed during the academic year)-**

Ms Jismy K Joseph submitted her thesis in May 2021

### **Department Outreach Activities**

Dr.K.Madhavi is nominated as Coordinator, ERP , for SMILE project for NITW MIS Since 26 th October, 2021

Dr.K.Madhavi, BOS Committee, G. Pullaiah College of Engineering, Kurnool since Jan 2021.

Dr.K.Madhavi, Member Core Steering Committee of Vigyan Prasar, DST Govt of India sanctioned project to NIT Warangal entitled "Science Communication, Popularization and Extension" (SCoPE) Since 30 th September 2021.



Dr.K.Madhavi is Nominated as Expert Committee Member, to participate in Expert Visiting Committee, Meeting Online, appointed by **Western Regional Office, All India Council for Technical Education**, Mumbai for Bharati Vidyapeeth IMRDASangli, Maharashtra – 416416, on 30 th Dec 2020.

Dr.K.Madhavi is Nominated as Expert Committee Member, to participate in Expert Visiting Committee, Meeting Online, appointed by **Western Regional Office, All India Council for Technical Education**,

### Any other Department Specific

Department highlights

PAN NIT HSSRC

Conference Chair: Dr. Madhavi Kesari

Organising Secretary: Dr. B.Spoorthi, Dr.P.Madhumathi, Dr. R. Vennela

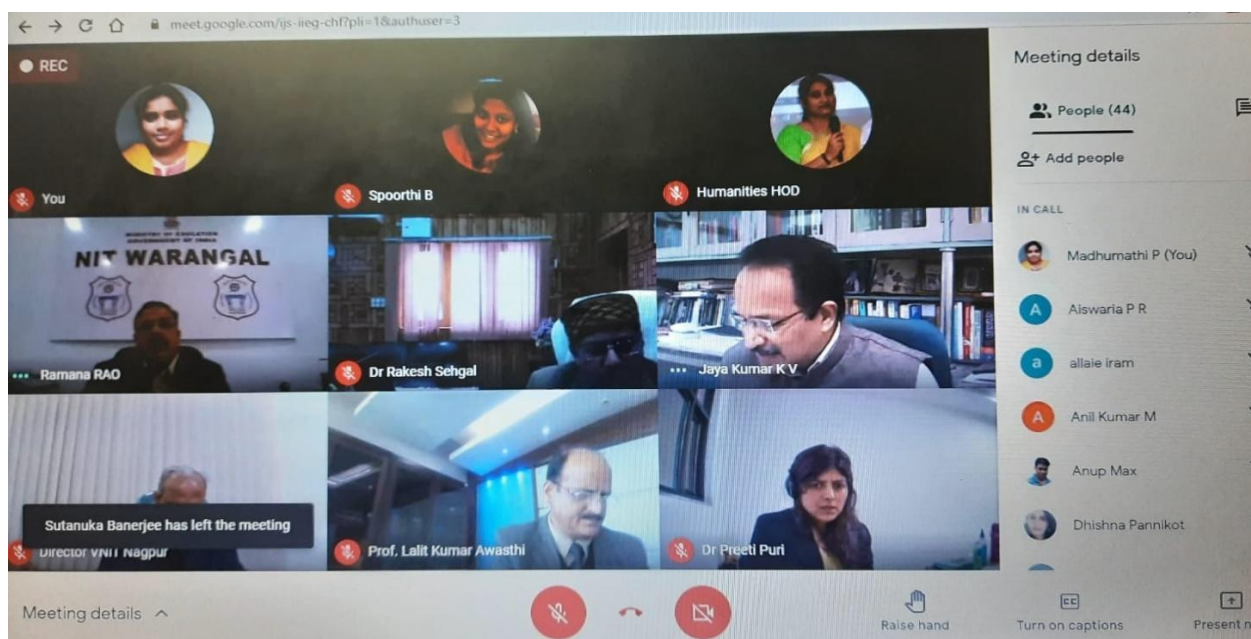
**The First Pan-NIT Humanities and Social Sciences Research Conclave (HSSRC)** was inaugurated on, 8th January 2021 on an online platform. The conclave served as a platform for Humanities and Social Sciences researchers, practitioners and educators to present and discuss the most recent innovations and trends in the fields of Humanities and Social Sciences, organised by **the Department of Humanities and Social Sciences of National Institute of Technology Warangal**, in collaboration with **14 other NITs**.

Mumbai for College of Management and Computer Science, Department of Management, Yavatmal. Harikisan Jajoo Education Sanstha, Yavatmal, on 31st Dec 2020.

### Department Association/Students Clubs Activities

Dr. B. Spoorthi, Faculty advisor of Literary and Debating Club since 2018- till date

Dr.P.Madhumathi, Faculty advisor of Music Club since August 2021



## DEPARTMENT OF PHYSICAL EDUCATION

Physical Education and youth fitness were assigned a definite place in their schemes of education. The finding of the biologists, physiologists and psychologists confirmed the necessity of activating muscles of all parts of the human body for their natural growth and the health for all round development.

With inactivity recognized as a menace to physiological well-being. Some authorities including the doctors suggest that exercise is the cheapest preventive medicine in the world. Researchers in physical education do agree that physical exertion is necessary for maintaining a functional physical fitness. Physical fitness provides us with basis for optimal physiological health and the capacity to enjoy a full life. Probably we do not need a high level of physical fitness to work in a world dominated by technical innovations but regular physical activity is necessary if our body is to function properly.

Health education and physical education have been accepted by the policy framers an essential and very important part of educational activity in schools and colleges. There has been unanimous appreciation that a healthy mind dwells in a healthy body and, therefore, physical and mental developments go together. Participation in games and sports improves the health of the participant and improves his motor qualities and responses. Even more importantly, active participation in games and sports fosters the attitude of sportsmanship, fairness and team spirit. It has been internationally recognized since long that if the schools and colleges do not provide outlet for the youth in a constructive and healthy manner through sports and games, the youth get into the habit of idling.

Modern thinkers in education, now a days, emphasize that the best individual is one who is physically fit, mentally sound and sharp, emotionally balanced and socially well adjusted. Out of the myriads of new facts concerned with educational process, the fact that human beings need a well-planned curriculum of physical education deserves much consideration. It then becomes imperative that the discipline of physical education should be put into proper perspective and thoroughly studied for the welfare of the humanity at large.

Keeping this as a background it is thought to strengthen the Physical Education Department at this prestigious institution so as to enable the student to improve their health and endurance, so that they can perform the duties that reward them after they leave the institution.

## Faculty Details



Dr.P.Ravikumar  
Professor



Dr. R.Dhayanithi  
Professor



Dr.P.Madhusudhan  
Professor

### The Department of Physical Education has following Infra Structure Facilities

#### INFRA STRUCTURE INDOOR FACILITIES

- 2 Table Tennis Halls.
- 1 Chess and 1 Carrom Hall.
- 1 Yoga Hall.
- 1 Meditation Hall.
- 3 shuttle Badminton Courts.
- 2 Gym Halls.
- 3 Faculty Rooms.
- 2 Store Rooms.
- 1 Games Boys Room.

#### IN THE STADIUM

- Multipurpose Ground Facility with flood lights which accommodates standard 400 Mts. Track with Flood lights
- Kho-Kho Ground, Football, Cricket fields and with 2 artificial turf net practising cricket pitches with Flood lights
- Galleries of sufficient seating capacity in the stadium and also a walking track.
- 2 Synthetic Top surface Basketball Courts with flood lights and sitting galleries.
- 2 Volleyball Courts 5 Tennis Courts (2 Synthetic, 1 Concrete and 2 Clay Courts),
- 2 Ball Badminton Courts with Flood lights

#### INFRA STRUCTURE FACILITIES IN AND AROUND HOSTEL BLOCKS

- 2 Shuttle courts and 1 Tennikoit court inside the Ultra Mega hostel.
- At Ultra Mega hostel 2 clay Volleyball Courts and Basketball court near the Ultra Mega Hostel.
- Multipurpose Ground with flood lights to play any sort of sports and games (rear side of the ultra-mega hostel).
- Gym facilities 2 common halls in the mega hostels and 2 rooms in the ultra-mega block 1 hall in the DASA hostel.

15 Table Tennis tables were placed in different hostels as detailed below:

- 4 Table tennis in Ultra mega hostels
- 3 in the mega hostel
- 2 T.T Tables in the DASA Hostel, 14th Block, 13th Block, 12th Block 11th Block, 2nd block and 1st block.



## **INFRA STRUCTURE FACILITIES IN GIRLS HOSTELS**

- 1 Concrete Basketball Court proposed to upgrade with Synthetic top and flood light facility.
- 1 Volleyball Court
- 2 Gym rooms in the lady's hostels
- 1 Tennikoit Court
- 2 Table Tennis Tables

The Department conducts Extra Academic Activity (EAA) programme as a mandate course for the first year students.

## **ROUTINE PROGRAMME OF THE DEPARTMENT of PHYSICAL EDUCATION**

- Facilitating the student and staff community for the utilization of the available infrastructure facility in the institute to be physically fit and wellbeing.
- Conducts International Yoga Day 21 June every year in a grand scale.
- Organises Independence Day and Republic Day in a befitting manner with number of Physical Education activities
- To prepare institute teams towards participation in the Extramural Competitions like Inter NIT or Inter Universities and other open tournaments in various sports and games.

## **ORGANISATION OF TOURNAMENTS**

- Conducting of Intramural competitions for student's community
- Organising Extramural competitions like Inter NIT or Inter Universities and other local tournaments.
- Friendly matches with other institutions for the students.
- Conducting fitness activities for the staff like Yoga, Meditation, Etc.
- Helping to conduct sports activities of various Departments & Associations.

### National Open Athletics:

The 60th Open Nationals Race Walking Event, which has been, organized at our Campus in 20kms, 35kms, and 50kms Men and Women events. Our Beloved Director has flagged off the event and distributed the Medals to the winners. Registrar also gave away the Medals for the winners. The events took place during 16th-18th September 2021 from morning 5.00am to 11.30 am.

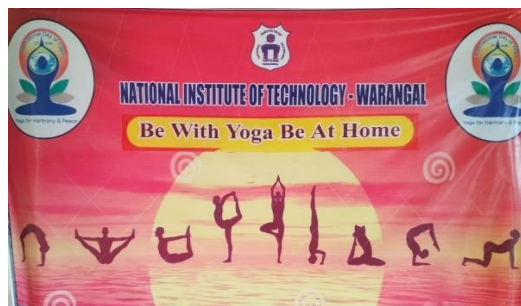
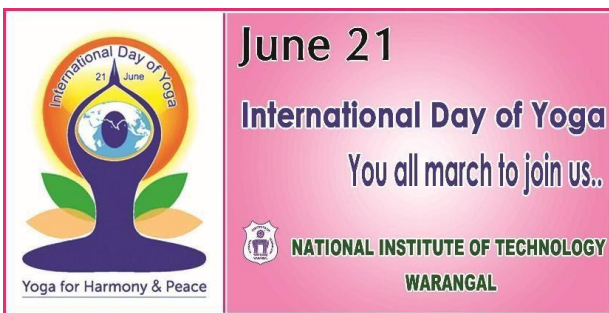




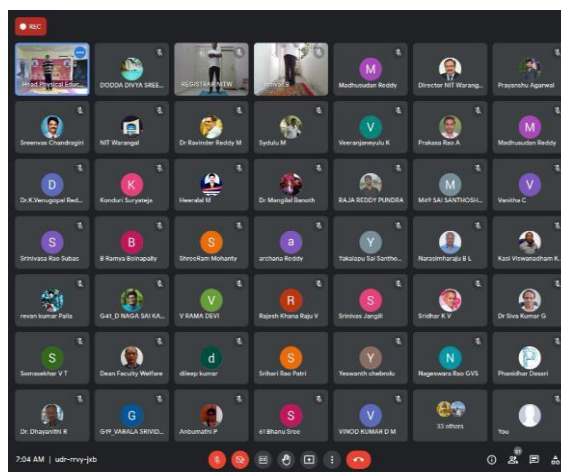


## International Day of Yoga Celebrations

International Day of Yoga Day was celebrated (virtual session) held on 21st June, 2021. A large number of students, staff, faculty along with their family members took part in this programme.







### Outreach Activities:

- Dr.P. Ravi Kumar delivered a lecture on "Health,Wellness & Personal Fitness" in the "International Webinar on Fitness a Way of Life" organised by the Directorate of Physical Education and Sports Science, S.K.University,Anantapur during National Sports Day 2021 Celebrations(29th August 2021)
- Dr. P. Ravi Kumar, Professor, Department of Physical Education as a Resource Person delivered a Lecture on "Capacity Building / Personal Effectiveness" during online FDP "PEASE – 2021" sponsored by AICTE – ATAL Academy Program at NIT, A.P., on 28-06-2021
- Dr. P. Ravi Kumar, Professor, Department of Physical Education as a Resource Person delivered a Lecture on "Promoting Excellence in Physical Education and Sports through Innovation in Teaching and Learning" during online FDP organized by Guru Angad Dev – Teaching Learning Centre of Ministry of Education, Sri Guru Tegh Bahadur Khalsa College and University of Delhi on 01-06-2021.
- DR.P.Ravi kumar, Moderator for Two Day International E-Conference on "Trends Issues and Development of Physical Education and Sports" under the aegis of NAPES, DPE, Manipur University and Fit India Campaign Committee, during 30th & 31st July, 2020.
- Dr.P.Ravi Kumar, Resource Person delivered a Lecture on "Sustainability and Legacy in Sports: Challenges and Perspectives" in the IV International Conference (Webinar) at National University of Ukraine, KYIV, Ukraine during 26-27, November, 2020
- Dr.P.Ravi Kumar, Board of Studies in Physical Education, Kakatiya University since January, 2020

## INTERNATIONAL RELATIONS AND ALUMNI ACTIVITIES 2020 - 2021



**(Prof.N. SELVARAJ)**  
**Dean, IR&AA**

### **SPARC (Scheme for Promotion of Academic and Research Collaboration):**

The major aim of SPARC initiative is to bring the strong research collaboration between Indian research groups with top research group in the leading Universities of the world, in areas that are at the cutting edge of science or with direct social relevance to the mankind, specifically India. The strong joint research should lead to tangible result that should include large number of high quality research publications, solution to key national and international problems, development of niche courses, high quality text books and research monographs, imbibing of best practices from top international academicians and researchers, strong bilateral co-operation, and improved world reputation and ranking of Indian Institutions. Prof N. Selvaraj is the nodal coordinator for SPARC from the institute. The institute also is the nodal coordinator for Taiwan under SPARC.

The institute has been sanctioned 10 projects under SPARC with collaboration from top universities of USA, UK, Taiwan, Singapore, Israel and Canada.

### **GIAN (Global Initiative for Academic Networks):**

GIAN is a flagship program of the Ministry of Human Resource Development to bring some of the reputed academicians, researchers and industrial experts to the Indian institutes to conduct short term programmes of duration one to two weeks with the following objectives:

- To increase the footfalls of reputed international faculty in the Indian academic institutes.
- Provide opportunity to our faculty to learn and share knowledge and teaching skills in cutting edge areas.
- To provide opportunity to our students to seek knowledge and experience from reputed International faculty.
- To create avenue for possible collaborative research with the international faculty
- To increase participation and presence of international students in the academic Institutes.
- Opportunity for the students of different Institutes/Universities to interact and learn subjects in niche areas through collaborative learning process.
- Provide opportunity for the technical persons from Indian Industry to improve understandings and update their knowledge in relevant areas.
- Motivate the best international experts in the world to work on problems related to India.
- Develop high quality course material in niche areas, both through video and print that can be used by a larger body of students and teachers.
- To document and develop new pedagogic methods in emerging topics of national and international interest.

It is to be noted that NIT Warangal has been identified as one of the best performing institutes in the country. 69 courses were completed at the institute and these courses were highly commended and 17 courses were approved during 2020 - 2021.

### **Erasmus+ - Incoming Teaching Staff**

The University of Santiago de Compostela participates in Erasmus+ International Credit Mobility (ICM) under Key Action 1 (KA107) since 2016 with partner institutions in several countries according to our Strategic Plan for Internationalisation

Erasmus+ ICM offers opportunities for students to study and staff to teach or train via exchanges with partner higher education institutions beyond Europe.

Via this programme, undergraduate students undertake an exchange for a semester for which credits are obtained, PhD students can carry out a research exchange for at least 3 months, and university **staff** can spend a week abroad teaching or training in internationalisation. 2 proposals were approved and 01 has been completed in 2020 – 2021.

### **Alumni Activities**

- Distributed Laptops to the needy merit students donated by the NITW Alumni on 1<sup>st</sup> March, 2021
- NITWAA Warangal Chapter Family Get Together held on 03rd October, 2021
- NITWAA Madhya Pradesh Chapter Family Get Together was held on 31<sup>st</sup> October, 2021
- NITWAA Hyderabad Chapter Family Get Together was held on 07<sup>th</sup> November, 2021
- Distributed Text books to the needy students donated by the NITW 1980 Alumni batch on 10th October, 2021
- Distinguished Alumni Award Ceremony held on 10th October, 2021
- 



**Distinguished Alumni Award Ceremony held on 10th October, 2021 (Hybrid Mode)**



**Distributed Text books to the needy students donated by the NITW 1980 Alumni batch on 10th October, 2021**



### Profile of Academic Activities Organized during the Academic Year 2020-21

- ✓ The Teaching Learning Center (TLC) of NIT Warangal was established at NIT Warangal under the MHRD's "Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT)" scheme in 2016. It has been doing commendable job in conducting Faculty Development Programmes, both on the campus also in other Institutions.
- ✓ Under this Scheme, a separate building has been built exclusively for the TLC activities, with the state-of-art training facilities that include a studio for production of video and e-lectures, training halls, seminar halls, a computer lab for developing on-line courses and other learning resources, learning spaces for facilitating interaction among various stake holders. The center also has facilities for hosting on-line courses employing Learning Management Systems like MOODLE.
- ✓ The Centre has so far conducted 59 In-house Faculty Development Programs (FDPs) and trained 2920 Faculty Members in 374 training days. Out of 59 FDP's organized, the TLC has organized 2 Faculty Development Programmes especially for Women Faculty in Higher Education during the months of January and June, 2019 and trained 121 Faculty Members drawn from various parts of the Country.

#### ORGANIZATIONAL MEMBERS



Prof. N. V. Ramana Rao  
Director, NIT Warangal  
Chairman, TLC



Prof. V. Rajeswar Rao  
Dean, R&C,  
Co-Chairman, TLC



Prof. D.V.S.S. Siva Sarma  
Coordinator  
TLC

- ✓ The TLC of NIT Warangal is now conducting all its training programmes virtually through Online Mode due to COVID-19. The Centre has conducted 25 Online Faculty Development Programmes in 118 Training Days and trained nearly 1557 Participants across the country.
- ✓ The center has conducted three Faculty Training Programmes and trained 350 faculty members of NIT Warangal in Learning Management System with MOODLE. The role and importance of asynchronous learning need not be over-emphasized in the present scenario of COVID-19 assuming pandemic proportions.

- ✓ The pandemic has only triggered the need to expedite process of adapting MOODLE, as the transformation from the conventional classroom model to LMS based model has become inevitable. This training program, which is being organized under the aegis of the Teaching-Learning-Centre (TLC), is essentially a humble beginning in the endeavor of achieving this objective.

**LIST OF FACULTY DEVELOPMENT PROGRAMS ORGANIZED BY THE TLC DURING THE ACADEMIC YEAR 2020-**

**21**

<b>S. No.</b>	<b>Title of the Virtual Workshop - Training Programme</b>	<b>Dates</b>	<b>Number of Participants</b>	<b>Organized by</b>	<b>Coordinators</b>
<b>1</b>	Innovative Teaching Methods on Recent Advances in Concrete and Sustainable Technologies (ReCAST-2020)	1-5 Jul 2020	50	Department of Civil Engineering	Prof. P. Ratish Kumar, Prof. G. Rajesh Kumar, Dr. S. Venkateswara Rao
<b>2</b>	Emerging Trends in Biotechnological Advancements: Challenges and Prospects in Tackling Human Diseases	13-17 Jul 2020	77	Department of Biotechnology	Dr. Prakasah Saudagar, Dr. S. Chockalingam
<b>3</b>	Teaching and Learning of Additive Manufacturing Technology: Emphasis on Metal 3D Printing	13-18 Jul 2020	115	Department of Mechanical Engineering	Dr. Y. Ravi Kumar, Prof. L. Krishnanand, Dr. M. Manjaiah
<b>4</b>	Learning Management System with MOODLE	Jul 14-17 2020; Jul 21-24 2020; Jul 28-31 2020	350	TLC	Prof. A.Ramachandraiah ; Prof. V. T. Somasekar
<b>5</b>	Teaching and Learning of Advanced Control Systems	10-16 Aug 2020	96	Department of Electrical Engineering	Dr. B.L. Narsimha Raju, Prof. M. Sailaja Kumari, Dr. R. Jeyasenthil
<b>6</b>	Recent Trends in Computer Simulations for applications in Biotechnology: Teaching and Learning strategies	17-21 Aug 2020	47	Department of Biotechnology	Dr. Soumya Lipsa Rath, Dr. R. Satish Babu
<b>7</b>	Advances in Biological Wastewater Treatment Methods: Teaching and Learning Strategies	7-11 Sep 2020	85	Department of Biotechnology	Dr. Surajbhan Sevda, Dr. R. Satish Babu
<b>8</b>	Content Preparation and Delivery for Online Mode of Teaching	5-10 Oct 2020	35	TLC	Dr. Thyageshwar C, Dr. T. Naresh, Dr. M. Satish, Prof. A. Ramachandraiah

<b>9</b>	Teaching and Learning of Advances in Manufacturing Technologies	30 Nov - 4 Dec 2020	47	Department of Mechanical Engineering	Prof. A. Kumar, Prof. L. Krishnanand, Dr. M. Manjaiah, Dr. Gangadharudu T
<b>10</b>	Teaching and Learning Strategies of Differential Equations and Applications in Science and Engineering	28 Dec 2020 1 Jan 2021	63	Department of Mathematics	Dr. P. Muthu, Dr. H. P. Rani, Dr. D. Bhargavi
<b>11</b>	Modern Digital Library Science and Technologies for Teaching, Learning and Research	4-8 Jan 2021	93	Central Library	Dr. K. Veeranjanyulu, Prof. A. Ramachandraiah
<b>12</b>	Effective Teaching and Learning of Techniques for Monitoring, Protection and Control of Microgrids	18-22 Feb 2021	55	Department of Electrical Engg	Dr. Y. Chandrasekhar, Dr. Altaf Q.H. Badar
<b>13</b>	Teaching and Learning of NMR Spectroscopy for Structure Determination	19-24 Feb 2021	86	Department of Chemistry	Dr. B. Srinivas, Dr. K. Hari Prasad
<b>14</b>	Teaching and Learning of Green Chemistry: Nurturing a New Generation of Chemists	26 Feb - 3 Mar 2021	62	Department of Chemistry	Dr. K. Hari Prasad, Dr.B. Srinivas
<b>15</b>	Effective Teaching and Learning of Power Converters for Electric Vehicles	1-6 Mar 2021	60	Department of Electrical Engg	Dr. P. Srinivasan, Dr.S. Porpandiselvi, Prof.N. Vishwanathan
<b>16</b>	Teaching and Learning of Drug Discovery Process	4-9 Mar 2021	67	Department of Chemistry	Dr.D.Kashinath,Dr .V. Rajesh Kumar
<b>17</b>	Teaching and Learning Strategies for Frontiers in Membranes for Wastewater Treatment	8-12 Mar 2021	53	Department of Chemical Engg	Prof.Anand Kishore Kore, Dr. Kishant Kumar, Dr. Naresh Thota
<b>18</b>	Teaching and Learning of Power Converters and Control Techniques for Renewable Energy Systems	8-13 Mar 2021	41	Department of Electrical Engg	Dr.Swathi Devabhaktuni, Dr. S. Porpandiselvi, Prof.N. Vishwanathan
<b>19</b>	T and L of Open Source Simulation Software SCILAB	10-14 Mar 2021	158	Department of Electrical Engg	Dr. S. Porpandiselvi,Dr.Y . Chandrasekhar, Prof.P. Srinivasan, Dr.P. Deepak Reddy
<b>20</b>	Teaching and Learning Practices in Computational Biology	15-19 Mar 2021	28	Department of Biotechnology	Dr. Perugu Shyam,Dr.Anbumathi P
<b>21</b>	Effective Teaching and Learning of Modern Electric Drives	15-20 Mar 2021	27	Department of Electrical Engg	Dr. P. Srinivasan, Prof. V.T. Somasekhar, Dr. A. Kirubakaran

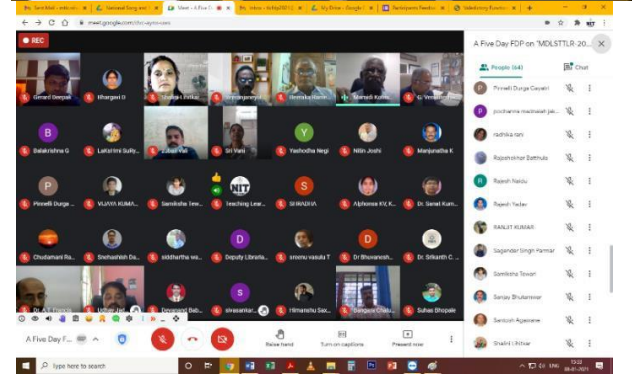
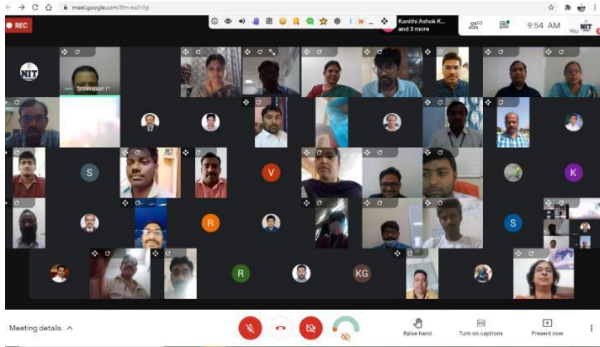
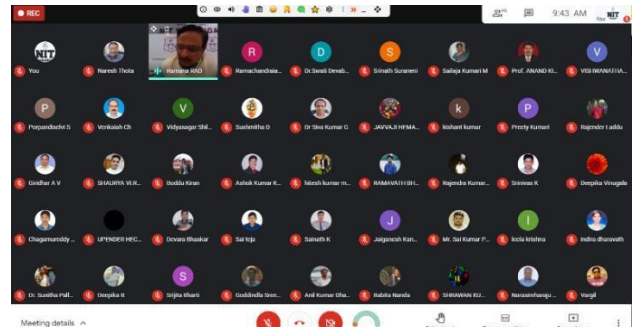
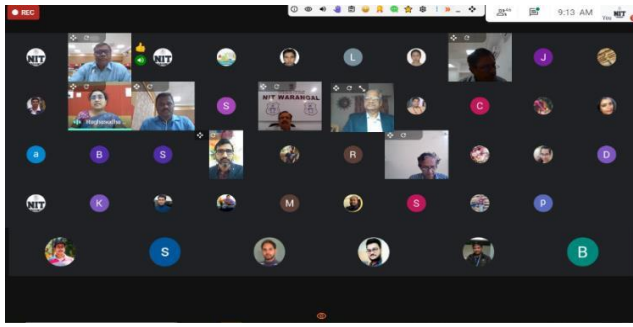
<b>22</b>	Applications of DFT (Density Functional Theory) in Teaching and Learning Chemistry, Physics & Material Science - with Software for Chemistry and Materials (SCM-AMS)	19-24 Mar 2021	53	Department of Chemistry	Dr.M.Raghasudha, Dr. Ravinder Pauer
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#### TOTAL NUMBER OF ACTIVITIES ORGANIZED BY THE TEACHING LEARNING CENTRE

S. No.	Activity	Total No. of Programmes Conducted	Total No. of Training Days	Total No. of Faculty Trained
<b>1</b>	Faculty Development Programmes (FDPs)	55	282	2,720
<b>2</b>	Four-Week Induction Training Programmes (ITPs)	3	90	128
<b>3</b>	Four-Day Faculty Training Programmes (FTPs)	3	12	350
<b>4</b>	Conferences	1	2	72
<b>5</b>	Online Faculty Development Programmes (FDPs)	25	118	1,557
	Total	87	504	4,827

#### GLIMPSES OF THE ACTIVITIES CARRIED OUT BY THE TEACHING LEARNING CENTRE





**ONLINE/ VIRTUAL PROGRAMMES CARRIED OUT BY THE TEACHING LEARNING CENTRE**





# NATIONAL CADET CORPS (NCC)

NCC aims at inculcating a sense of patriotism and national pride in students. In addition it helps in physical fitness and also promotes all round personality in the students. Adequate facilities exist in the Institute for regular parades firing, training "obstacle course" and organizing camps. At present our Institute is having NCC (ARMY WING) student strength of 100.



**NCC Officer: Lt. Dr. Udaya Bhasker M**



### **Details of Certificates:**

S.No.	Name of the certificate	Duration
1	B	2 Years
2	C	1 Year

### **Social Service Activities of NCC:**

NCC has adopted community development activities with the aim of imbuing amongst cadets selfless service to the community, dignity of labour importance of self help, need to protect the environment and to assist weaker sections of the society in their upliftment. This was envisaged through programmes involving

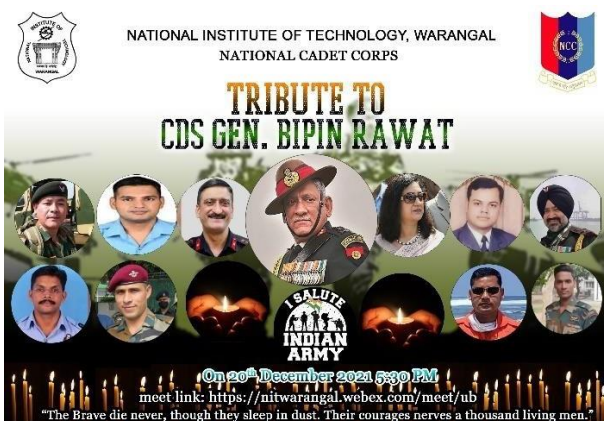
1. Tree Plantation
2. Blood Donation

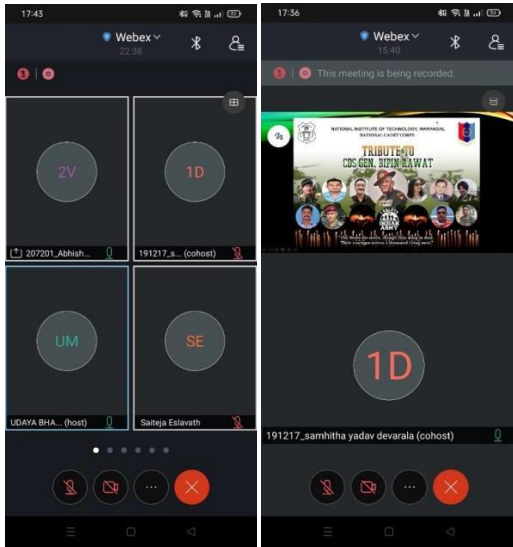


3. Visit of old age homes
4. AIDS awareness Rally
5. Disaster Management
6. Anti Drug/Tobacco awareness rally
7. Village adaption program
8. FIT INDIA Program
9. Ek Bharat Shresht Bharat Program
10. Awareness on New Education Policy

### Camps During 2020-2021

1. Inter Group Competition – Thota Madhu (TS19/SDA/200124)
2. Ek Bharat Shresht Bharat Camp – YalakaSushmitha (TS19/SWA/200149)
3. International Youth Exchange Programme, Singapore – Thota Madhu (TS19/SDA/200134)
4. Firing Camp – Thota Madhu (TS19/SDA/200134)
5. Treking Camp, Thirupathi – HariprasadSuvvari (TS19/SDA/200134)
6. Combined Annual Training Camp – 42 (27 -SD, 15 – SW )
7. Treking Camp, Belgavi – Vijay kumarmopidevi (TS19/SDA/200121), HariprasadSuvvvari(TS19/SDA/200134)






**NATIONAL INSTITUTE OF TECHNOLOGY  
WARANGAL**  
**NATIONAL CADET CORPS**  
*(under the Ministry of Education)*


The Environment Ministry has put out a plan to "prohibit" the use of some categories of single use plastic by 2022.  
 In Support and To Bring Awareness NIT - Warangal Conducting

**ESSAY WRITING  
AND POSTER MAKING COMPETITION**  
**Theme: Elimination of single use plastic**  
*On 28 & 29 August 2021 at 9:00 am*





Organised by:  
 Lt. M UDAYA BHASKER  
 ANO NIT Warangal

For Queries:  
 LCPL PRANAY REDDY 9347140369  
 mail: annam\_931967@student.nitw.ac.in  
 LCPL LAVANYA 9959304529  
 mail: manupa\_931917@student.nitw.ac.in

### Activities During 2020 – 2021

1. Essay and Poster Making Competition
2. August 15 Independence Day Piloting by Lavanya and Mary prathima
3. Fit India Program
4. RashtraGaan
5. AIDS Awareness Programme
6. Tribute To Chief Defence Staff General Bipin Rawat.

## UNNAT BHARAT ABHIYAN

Unnat Bharat Abhiyan (UBA) is a flagship programme of Ministry of Human Resource Development, Government of India. This programme aims to enhance Rural India by leveraging higher educational institutes in building the architecture of an inclusive India. UBA was initially launched by the Ministry of Human Resource Development (MHRD) in 2014 and later, Unnat Bharat Abhiyan 2.0 was launched on April 25, 2018.

UBA is a highly challenging scheme as it allows the students and faculty of various Higher Educational Institutes to devise methods and technologies for the betterment of rural populations. Especially in the agricultural field, as 71% of India's rural population is involved in agrarian activities. The main aim of UBA was to use eco-friendly technologies that could be easily accessed by the people of villages and help them lead a decent livelihood and provide them with shelter, food, and basic necessities.



Dr G Sunitha, Asst Prof, SOM

### **Activities Conducted from June 2020 - 21**

New PIs joined under RCI – NIT Warangal: Balaji Institute of Technology & Science, Sri Sumathi Reddy Institute of Technology for Women, Talla Padmavathi College of Engineering, Khammam Institute of Technology and Science

### **WEBINAR ON “Emerging Trends for Sustainable Rural Development through Organic Farming and Water Purification”**

Date: AUGUST 08/08/2020

National Education Policy 2020 – Sensitization September – 2020

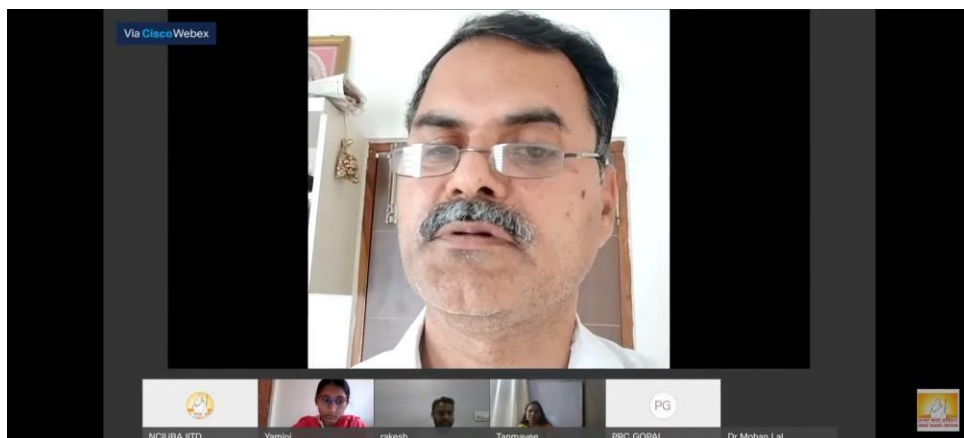




Visit to Jangoan Village – An Initiative to encourage organic farming – April 2020



**UNNAT BHARAT ABHIYAN - GRAM AAROGYA SERIES WEBINAR ON  
"COVID AWARENESS AND MYTHS IN VACCINATION" JUNE 2021** By Dr. Mohanlal Banoth,  
M.D., Associate Professor, Osmania General Hospital, Hyderabad





# NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL

## CENTRE FOR EDUCATIONAL TECHNOLOGY

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### **Data for Academic Report 2020-21**

Centre for Educational Technology at NIT Warangal was established in 1987 with an aim of improving instructional methods. Since its inception, the centre has organized a number of seminars and short-term training programs in Educational Technology to help teachers of engineering stream in acquiring effective instructional skills.

### **Faculty and Student Training Programs Organised during 2020-2021**

- 1. Centre for Educational Technology** organized a One-week online STTP on “**Learning Management System: MOODLE**” during **10<sup>th</sup> - 14<sup>th</sup> August, 2020**, in association with Department of Mechanical Engineering. This program was coordinated by Dr. M. J. Davidson, and Dr. G. Venkatesh. This program was conducted for the faculty of technical institutes to enable them handling the online educational requirement arising out of Covid-19 pandemic. About 120 faculty members of reputed institutes from different states of the country have participated. The exhibit of Moodle sites developed by the participants in the final day of the course proved the effectiveness of the course in meeting the course objectives.
- 2. Centre for Educational Technology** organized a One-week online STTP on “**MOODLE Learning Management System**” during **4<sup>th</sup> -8<sup>th</sup> January, 2021**, in association with Department of Mechanical Engineering and Department of Computer Science and Engineering. This program was coordinated by Dr. G. Venkatesh, Dr. Ilaiah Kavati and Dr. M. J. Davidson. This program was conducted for the faculty of technical institutes to enable them handling the online educational requirement arising out of Covid-19 pandemic. About 40 faculty members of reputed institutes from different states of the country have participated.
- 3. Centre for Educational Technology** organized a **Five-Day Online Student Training Programme** on “**Teaching and Learning of Open-source simulation software-SCILAB**” during **10<sup>th</sup> – 14<sup>th</sup> March, 2021** in association with Teaching Learning Centre and Department of Electrical Engineering **for the students of NIT Warangal**. This program was coordinated by Dr. S. Porpandiselvi, Dr. Y. Chandrasekhar, Dr. P. Srinivasan and Dr. P. Deepak Reddy. This program was conducted for the students of NIT Warangal to provide online training on Sci-lab, which is a free and open-source, cross-platform numerical high-level, programming language which is an alternate to MATLAB. **158 students have participated in this training program and got benefited.**

**Dr. S. Porpandiselvi,**  
**Faculty I/c, CET**



## Photo Gallery





## Republic Day Celebrations





# బహుముఖ విజ్ఞానవంతులుగా తీర్చిదిద్దాలి



Chairman DRDO Chairman



ఉద్వేగించారు. వరంగల్ జాతీయ సాంకేతిక విద్యా సంస్థ(ఎన్ఐటీ) ఆధ్వర్యంలో 'సాంకేతిక విద్యలో జాతీయ విద్యా విధానం అమలు వ్యూహాలు' అనే అంశంపై బుధ వారం ఆన్లైన్లో జాతీయ వెబినార్ ను నిర్వహించారు. ఈ వెబినార్లో దేశవ్యాప్తంగా ఐఐటీ, ఎన్ఐటీలతో పాటు పారిశ్రామిక, పరిశోధనా సంస్థల ప్రముఖులు పాల్గొన్నారు. నిట్ సంచాలకుడు ఆచార్య ఎన్.వి. రమణారావు మాట్లాడుతూ దేశంలోనే వరంగల్ నిట్ ప్రతిష్టాత్మక ఇంజనీరింగ్ కళాశాలగా గుర్తింపు పొందిన సాంకేతిక విద్యలో ఎన్ఐటీ అమలుపై వెబినార్ నిర్వహించడం గర్వించదగిన విషయమన్నారు. గౌరవ అతిథిగా పాల్గొన్న డీఆర్డీవో వైర్యన్ డాక్టర్ జి.సతీష్ రెడ్డి మాట్లాడుతూ క్షేత్ర

స్థాయిలో పరిశోధనలు చేసి నూతన ఆవిష్కరణలు చేసేవిధంగా ఎన్ఐటీ అమలు చేయాలన్నారు. ఇంటర్నెట్ ఆఫ్ థింగ్స్(ఐఐటి), బిగ్ డేటా, మెషిన్ లెర్నింగ్ వంటి అంశాలపై బహుముఖ పరిజ్ఞానం కలిగి ఉండాలన్నారు. సాంకేతిక విద్యా సంస్థల పరిశోధకులకు డీఆర్డీవోలో అవకాశాలు అందుబాటులో ఉన్నట్లు తెలిపారు. హైదరాబాద్ ఐఐటీ వైర్యన్ డాక్టర్ బి.వి.ఆర్. మోహన్ రెడ్డి మాట్లాడుతూ నూతన ఆవిష్కరణలు చేసేలా విద్యావిధానం ఉండాలన్నారు. ఏఐ సీటీఈ వైర్యన్ అనిట్ డి.సాహస్రబుద్ధే, ఎన్ఐటీ వైర్యన్ ప్రొఫెసర్ కె.కె.అగర్వాల, ఎన్ఐటీ తిరుచ్చి చైరెక్టర్ ప్రొఫెసర్ మినీషాహిదామన్ వివిధ అంశాలపై ప్రసంగించారు. వెబినార్ కు నిట్ ఆకడమిక్ డీన్ ఆచార్య శివశర్మ, ప్రొఫెసర్ కె.వి.జయకుమార్, ఎం. సైదులు, సీఎస్కె. ప్రసాద్, డాక్టర్ పి.వెంకటేశ్వరరావు సందాసకర్లుగా వ్యవహరించారు.

**వెబినార్లో మాట్లాడుతున్న డీఆర్డీవో వైర్యన్ డాక్టర్ జి.సతీష్ రెడ్డి, ఐఐటీ వైర్యన్ డాక్టర్ బి.వి.ఆర్.మోహన్ రెడ్డి, చిత్రంలో నిట్ సంచాలకుడు ఎన్.వి.రమణారావు**

**నిట్ క్యాంపస్, న్యూస్ టుడే:** విద్యార్థులను బహుముఖ జ్ఞానవంతులుగా తీర్చిదిద్దే విధంగా నూతన విద్యా విధానం అమలు చేయాలని జాతీయ వెబినార్లో ప్రముఖ విద్యావేత్తలు



## తయారీ రంగంలో మార్పులతో ఎన్నో అవకాశాలు

**నిట్ క్యాంపస్, న్యూస్ టుడే:** తయారీ రంగంలో వస్తున్న మార్పులపై వరంగల్, జైహూర్, ఉత్తరాఖండ్ ఎన్ఐటీలు సంయుక్తంగా ఆన్లైన్లో మూడు రోజుల అంతర్జాతీయ సదస్సును గురువారం ప్రారంభించాయి. ఈ సదస్సులో పాల్గొన్న వక్తలు సాంకేతిక సహకారంతో తయారీ రంగంలో స్థానిక ఉత్పత్తులకు ప్రాధాన్యమిచ్చి కొత్త తరం పారిశ్రామికవేత్తలకు సరికొత్త అవకాశాలు కల్పించాలని ఉద్ఘాటించారు. పోర్చుగల్ దేశం మిన్స్ట్రో విశ్వవిద్యాలయానికి చెందిన ప్రొఫెసర్ జోషి మెసిడో కొవిడ్-19 నేపథ్యంలో అంతర్జాతీయంగా తయారీ రంగంలో వస్తున్న మార్పుల గురించి వివరించారు. వరంగల్ నిట్ సంచాలకులు ఆచార్య ఎన్.వి.రమణారావు నిట్ యాంత్రిక విభాగంలో డ్రీడ్ స్రింటింగ్, టూల్ డిజైన్ లతో తదితర అంశాలపై చేపట్టిన విస్తృత పరిశోధనలను



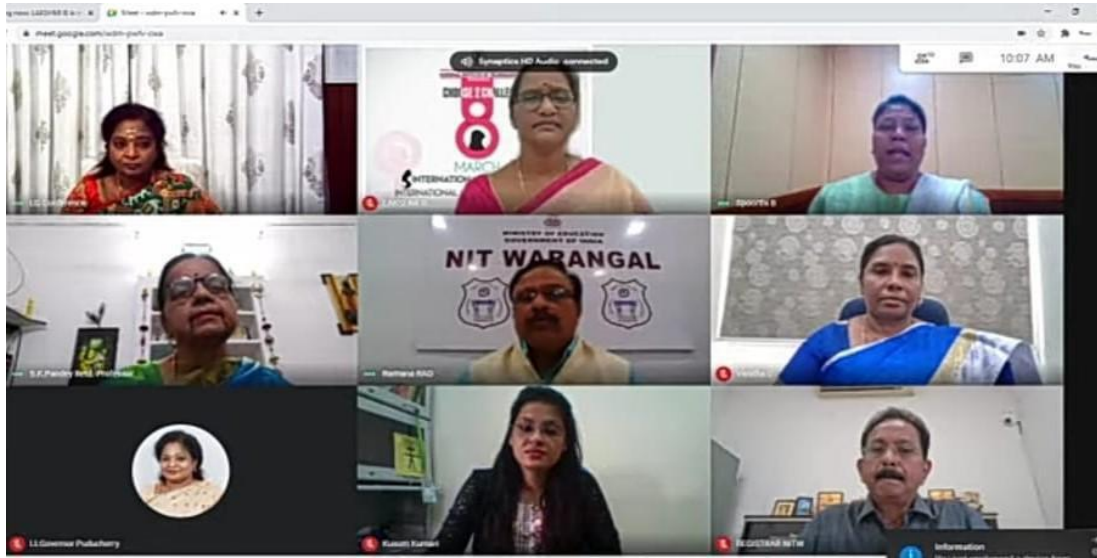
**సదస్సులో మాట్లాడుతున్న పోర్చుగల్ మిన్స్ట్రో వర్జీ ప్రొఫెసర్ జోషి మెసిడో**

వివరించారు. పలువురు అధ్యాపకులు అంతర్జాతీయ స్థాయి పేటెంట్లను సైతం దక్కించుకున్నారని చెప్పారు. ఎన్ఐటీ యాంత్రిక విభాగం హెడ్ ప్రొఫెసర్ ఆడెపు కుమార్ మాట్లాడుతూ దేశంలోని విద్యా, పారిశ్రామిక సంస్థలతో ఎంపా్ యూలు కుదుర్చుకొని పలు సదస్సులు, వెబినార్లు, వర్క్ షాపులు నిర్వహించి తయారీ రంగంలో నూతన ఆవిష్కరణల కోసం పరిశోధనలు కొనసాగిస్తున్నట్లు చెప్పారు. అనంతరం సదస్సులో పాల్గొన్న ఆచార్యులు ఆన్లైన్లో పరిశోధన పత్రాలను సమర్పించారు. ఈ సదస్సులో జైహూర్, ఉత్తరాఖండ్ ఎన్ఐటీల సంచాలకులు ఆచార్య ఆర్.వై. ఉదయ్ కుమార్, ఆచార్య సతీష్ కుమార్ పాల్గొన్నారు.









**National Institute of Technology Warangal**






**Dr. Ramesh Pokhriyal Nishank**  
Hon'ble Education minister, GOI

Date: 22<sup>nd</sup> October 2020 (Thursday)  
Time : 4: 30 pm (Through virtual mode)

**Foundation Stone**



Rudrama Devi Ladies Hostels Complex

**Inaugurations**



Saradar Vallabhai Patel Atithi Grih  
(Renovated)



Visvesvaraya Centre for Skill Development  
(Renovated)



Pandit Madan Mohan Malaviya  
Teaching Learning Centre

**NIT Warangal Creates eco-friendly wonder with 'Miyowaki' forest**

Before *miyowaki* forest tree plantation started on 15.08.2019





Now NIT Warangal Creates 'Miyowaki' forest











# నిట్లో ఓపెన్ హౌస్ అంకుర ప్రాజెక్టులు ప్రారంభం

**నిట్ క్యాంపస్, న్యూస్ టుడే:** వరంగల్ జాతీయ సాంకేతిక సంస్థ (ఎన్ఐఐటీ) ఆవిష్కరణల సమాహార కేంద్రం (సీఐఐ) ఆధ్వర్యంలో విద్యార్థుల్లో అంకుర ఆవిష్కరణలు ప్రోత్సహించేందుకు ఓపెన్ హౌస్ ఈవెంట్ లో భాగంగా ఓపెన్ ఇన్నోవేషన్ ఫోటో షాం, సైనెక్స్ ఓపెన్ (ఆపరేటింగ్ సిస్టం) అంకుర ప్రాజెక్టులను నిట్ సంచాలకుడు ఆచార్య ఎన్.వి.రమణ



తాము రూపొందించిన ప్రాజెక్టు గురించి వివరిస్తున్న విద్యార్థులు

రాష్ట్ర ప్రారంభించారు. కొవిడ్ విపత్తు పరిస్థితుల్లో జవిష్కృతుల్లో సానుకూల పలికాడు రాబట్టడానికి హైటెక్ ఆధారిత పరిశోధనలపై నిట్లోని సీఐఐ విభాగం 20కి పైగా ప్రాజెక్టులను ఆభివృద్ధి చేసింది. రాజ్ యే కొద్ది నెలల్లో మార్కెట్లో అందుబాటులోకి రానున్నాయి. నిట్ డైరెక్టర్ మాట్లాడుతూ అంకుర ఆలోచనలు ఆవిష్కరణకు అవసరమైన సహకారాన్ని అత్యున్నత అభియాన్ లో భాగంగా వరంగల్ నిట్ అందిస్తుందన్నారు. నిట్ సీఐఐ విభాగం ఇన్ ఛార్జి ఆచార్య శ్రీహరిరావు మాట్లాడుతూ సాంకేతిక విద్యార్థుల్లో సాంకేతిక ఆలోచనలను ఆవిష్కరించి స్టార్టప్లు, పేటెంట్లు సాధించేలా వారికి హ్యూమన్, మేకథాన్, ఓపెన్ హౌస్, వర్క్ షాపులు నిర్వహించి ప్రోత్సహిస్తున్నట్లు చెప్పారు. అనంతరం విద్యార్థులు తాము రూపొందించిన సైబర్ సెక్యూరిటీకి సంబంధించిన బగ్ కైమ్, మోనాడ్ స్టార్టప్ల గురించి వివరించారు. కార్యక్రమాన్ని నిట్ విద్యార్థులు ఆన్ లైన్ లో వీక్షించారు.

**ఈనాడు**  
epaper.eenadu.net

## కొత్త కొలువులు..

**రోబోటిక్స్ లాసూ**  
రానున్నదశాకాలో యుగం. సాంకేతిక విద్యలో ఈ పరిణామానికి ప్రాధాన్యం ఎంతగానో పెరుగుతోంది. ఈ క్రమంలో ఎన్ఐఐటీ విద్యార్థులు ఈలోటిల్లో రంగులో కూడా అడుగుపెడుతున్నారు. ఈసారి ఉత్కలం ఎంపికలో రెండు కోట్ల డిగ్రీ కంపెనీలు ఏర్పడ్డాయి. కొవిడ్ సేవల్లో అనేక అనుభవ శ్రుతి హ్యామనాయిడ్ లోలో వాడకు మన దేశంలో కూడా పెరిగింది. ఈ క్రమంలో నిట్లో ఈ కొలువులకు కూడా ప్రాధాన్యం పెరుగుతోంది.

**ఈనాడు, వరంగల్:** మొదలై పోస్ట్ ఒక ముప్పు గురించి ఆన్ లైన్ లో వెలుగుతుంది. మర్నాడే మన పేజీలో వేతలో ఆ ముప్పు ప్రకటనలు కుప్పలు తెప్పలుగా ప్రవృత్తమవుతుంది మనకు అభ్యర్థుల కలిగిస్తుంది. వేటా ఆనలెక్ట్ మెషిన్ లెర్నింగ్, ఇంటెల్లెజ్ట్ అఫ్ డింగ్ (ఇఎఫ్), ఆర్టిఫిషియల్ ఇంటెలిజెన్స్ (ఐఐ) లాంటి సాంకేతిక పరిణామాల్లో కంపెనీలు మన వివరాలు తీసుకొని అందుకు అనుగుణంగా ప్రకటనలు ఇస్తుంటాయి. అయితే ఈ తరహా కొత్త కొలువులు పెరుగుతున్నాయి. వరంగల్ జాతీయ సాంకేతిక విద్య సంస్థ (నిట్)లో ఈ ఏడాది ఫైనమెంట్లో ఈ తరహా కొత్త కొలువులు మొత్తం విద్యార్థుల సంఖ్య పెరిగింది. ఆన్ లైన్ వ్యాపారం చేస్తున్న కుపెన్ లో డేటా ఆనలెక్ట్ ద్వారా తమ వ్యాపారాన్ని విస్తరించుకుంటాయి. ఈ క్రమంలో ఆ విభాగాల్లో ఉద్యోగాలు కూడా పెరుగుతున్నాయి. ఒకప్పుడు సాఫ్ట్వేర్ కొలువులు అనేకం సీ, సీ ప్లస్ ప్లస్, జూనియర్, డీజీఎం వంటి నైపుణ్యాలు ఉన్న వారినే కంపెనీలు నియమించుకొనేవి. క్రమంగా కొత్త సాంకేతికతకు ప్రాధాన్యం పెరుగుతోంది. మెషిన్



లెర్నింగ్, పైవాన్ ప్రోగ్రామింగ్, ఇఎఫ్, ట్రాక్ ట్రైన్ టెక్నాలజీ, కృత్రిమ మేధ, లాంటి సాంకేతిక పరిణామాన్ని విస్తృతంగా వినియోగిస్తున్నారు. బ్యాంకింగ్ రంగం నుంచి మొదలుకొంటే ఈ కామర్స్ వాణిజ్యం వరకు దాదాపు ఆన్ని రంగాల్లో వీటికి ప్రాధాన్యత పెరుగుతోంది. ఈ క్రమంలో ఆ నైపుణ్యాలు కలిగిన విద్యార్థులను కంపెనీలు ఏరికేరి ఎంపిక చేసుకుంటున్నాయి. ఈ సారి యూజీ, పీజీ కలిపి వరంగల్ నిట్లో సుమారు 620 మంది క్యాంపస్ నెల క్లస్ కాగా, ఇందులో డేటా ఆనలెక్ట్ విద్యార్థులే 70 మంది ఉన్నారని ఫైనమెంట్ అధికారి, కె.కె.హేమలక్ష్మి తెలిపారు.

గతేడాది నుంచి కొవిడ్ విజృంభణ వల్ల అనేక రంగాలపై తీవ్ర ప్రభావం వచ్చింది. ఆర్థిక విద్యారంభంలో పాటు నిట్ కూడా నెలల తరబడి మాతపడింది. ఆన్ లైన్ తరగతులు ప్రారంభమయ్యాక ఫైనమెంట్లకు కూడా క్రమంగా ప్రతిబంధం వచ్చింది. ఆన్ లైన్ ఫైనమెంట్ విధానం ద్వారా అనేక జాతి కంపెనీలు నిట్ విద్యార్థులకు ఆకర్షణీయమైన ప్యాకేజీలు ఇచ్చి ఎంపిక చేస్తున్నాయి. క్యాంపస్ లో కార్యకలాపాల లోకపోవడంతో మార్కెట్ పరిస్థితులు, సంస్థల ప్రాధాన్యంపై విద్యార్థులకు అవగాహన కల్పించేందుకు నిట్లో 'టిగ్ డేటా, ఆనలెక్ట్' అండ్ కన్సల్టింగ్ సెల్ ఏర్పాటు చేశారు. ఒక రకంగా చెప్పాలంటే నైపుణ్యాలు పెంచేందుకు ఇటీవలే లాంటిది. క్యాంపస్ ఫైనమెంట్లో ఎంపికైన విద్యార్థులకు అనుభవాలు జూనియర్ విద్యార్థులు తెలుసుకొంటున్నారు. వారిలో ముఖాముఖీ నిర్వహించి వీడియోలు రూపొందించి వాటిని ఇతర విద్యార్థులకు పేర్ చేస్తున్నారు. ఆన్ లైన్ తరగతులు వినే విద్యార్థులు కూడా ఫైనమెంట్ కోసం నిర్ణయమే క్రమంలో ఈ వీడియోలు ఉపయోగపడతాయి. క్యాంపస్ ఫైనమెంట్లకు మరో మూడు నెలల సమయం మిగిలి ఉండగానే టీజీ, ఎంపికలో కలిపి 80 శాతం విద్యార్థులకు కొలువులు దక్కాయి. టీజీ క్రీస్లో ఈ విద్యార్థులెక్కితే రూ. 52 లక్షల వార్షిక వేతనంతో మంచి ప్యాకేజీ దక్కింది. మొత్తం 630 విద్యార్థుల్లో 130 మందికి రూ. 20 లక్షలపై ప్యాకేజీ దక్కింది.

### నిట్లో ప్రత్యేక క్లబ్

<b>ఫైనమెంట్లు జలా</b>	<b>ఎంటికె</b>	<b>టిజీ</b>	<b>మొత్తం విద్యార్థులు కొలువు</b>
	400	700	● మొత్తం
	150	500	● సాధించిన వారు

అత్యధిక ప్యాకేజీ రూ. 52 లక్షలు  
రూ. 10 లక్షల ప్యాకేజీ పొందిన వారు 400  
రూ. 20 లక్షల ప్యాకేజీ పొందిన వారు 130

<b>ఎన్ఐఐటీలో టిజీ క్లబ్</b>	<b>ట్రాంచీలు</b>
8	28
<b>ఎంటికె క్లబ్</b>	<b>ట్రాంచీలు</b>
28	36



### ఈ విభాగాలకు ఆదరణ పెరుగుతోంది

- **ఆచార్య ఎన్.వి.రమణారావు, సంచాలకుడు, ఎన్ఐఐటీ**  
ఈ మధ్య కంపెనీలు కృత్రిమ మేధ, క్రీడ, డేటా ఆనలెక్ట్ లోలో తదితర విభాగాల్లో నైపుణ్యం ఉన్న విద్యార్థులను ఎంపిక చేసుకుంటున్నాయి. ఈ క్రమంలో విద్యార్థులు తమ నైపుణ్యంతోపాటు ఈ వర్క్ ఏరియల్ పై వ్యక్తిగతంగా మేల ప్రత్యేక చొరవ తీసుకుంటున్నాయి. సర్కారెంట్ క్లబ్ పెట్టి ప్రాజెక్టులు చేయిస్తున్నారు.



### నైపుణ్యాలు నేర్చుకున్నాం

- **డా. కె.కె.హేమలక్ష్మి, ఫైనమెంట్ విభాగాధికారి**  
గత ఏడాదిగా కొవిడ్ ప్రభావం ఉన్నప్పటికీ ఆన్ లైన్ లో క్యాంపస్ ఎంపికలు అవుతున్నాయి. టీజీలో దాదాపుగా గతేడాదితో సమానంగా ఎంపికలు జరిగాయి. మరో మూడు నెలల సమయం ఉంది కాబట్టి మరికొన్ని కంపెనీలు విద్యార్థులను ఎంపిక చేసుకుంటున్నాయి.



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